

651 Colby Drive, Waterloo, Ontario, Canada N2V 1C2 Telephone: (519) 884-0510 Facsimile: (519) 884-0525 www.CRAworld.com

June 10, 2010

Reference No. 056393

Mr. Michael Berkoff Remedial Project Manager U.S. Environmental Protection Agency - Region V Superfund Division, Remedial Response Section #2 77 West Jackson Boulevard (SR - 6J) Chicago, Illinois 60604 - 3590



Dear Mr. Berkoff:

Remedial Action Monthly Progress Report No. 3 - May 2010 Re: 12th Street Landfill Operable Unit No. 4

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

Allegan and Kalamazoo County

As required by Task 4, Progress Reports in the Statement of Work for the Remedial Design and Remedial Action at the 12th Street Landfill Operable Unit No. 4, please find attached three copies of the Progress Report No. 3 for the period of May 1, 2010 through May 31, 2010.

Should you have any questions or require any additional information, please do not hesitate to contact the undersigned.

Yours truly,

CONESTOGA-ROVERS & ASSOCIATES



AS/cs/19

J. Saric (U.S. EPA) - electronic only

L. Kirby-Miles (U.S. EPA) - electronic only

S. Chummar (U.S. EPA) - electronic only

T. Prendiville (U.S. EPA) - electronic only

S. Borries (U.S. EPA) - electronic only

R. Frey (U.S. EPA) - electronic only

S. Hutsell (CH2MHILL) - electronic only

P. Bucholtz (MDNRE) - three hard copies

K. Zakrzewski (MDNRE) - electronic only

R. Gay (Weyerhaeuser) - electronic only

M. Lebo (Weyerhaeuser) - electronic only

J. Jackowski (Weyerhaeuser) - electronic only

M. Erickson (Arcadis) - electronic only

D. Penniman (Arcadis) - electronic only

G. Griffith (Georgia-Pacific LLC) - electronic only

J. Keiser (CH2M Hill) - electronic only

J. Dembowske (CRA) - electronic only

A. Stadnyk (CRA) ~ electronic only



## Remedial Design and Remedial Action 12th Street Landfill, Operable Unit No. 4 Ostego, Michigan

This progress report is being submitted to the United States Environmental Protection Agency (U.S. EPA) in accordance with Task 4: Progress Reports and the Summary of Major Deliverables/Schedule contained in the Statement of Work for the Remedial Design and Remedial Action pursuant to the terms of the Consent Decree for the Design and Implementation of Certain Response Action at Operable Unit No. 4 and the Plainwell, Inc. Mill Property (Site) of the Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site (Consent Decree) which became effective February 22, 2005.

#### 1. WORK PERFORMED

- The Pre-Construction meeting was held on May 6, 2010. Attendees included U.S. EPA,
  Michigan Department of Natural Resources and Environment (MDNRE), CH2MHill,
  Weyerhaeuser NR Company (Weyerhaeuser), Conestoga-Rovers & Associates (CRA), and
  CRA Services (the construction division of CRA).
- The following field activities have commenced and/or have been completed during the May 2010 reporting period:
  - Mobilization of additional heavy equipment and supplies to the Site.
  - Completion of Site vegetation clearing. As of May 31, 2010, approximately 95 percent of cleared tree stumps and vegetative debris have been transported off Site for disposal.
  - Mobilization of Site trailers and established electricity to the Site.
  - Installation of erosion and sedimentation controls.
  - Setup of Site facilities and operations, included fencing to demark work areas, Site entrances, and personnel and equipment decontamination facilities.
  - Establishment of Site security (24 hours per day, 7 days per week).
  - Continual and on-going verification surveying of landfill and surrounding areas.
  - Completion of test pits on the north and southwest limits of the landfill in order to investigate the presence of the natural gas pipeline.
  - Commencement of excavation, placement, grading, and tilling of paper residuals from the on-property wetland areas on to the landfill surface.
  - Completion of Proctor testing on representative samples of materials encountered at the Site. One proctor was conducted on a mix of paper residuals, wetland material topsoil,

Page 1 of 4

## Remedial Design and Remedial Action 12th Street Landfill, Operable Unit No. 4 Ostego, Michigan

fly ash and sand (on site) and another was conducted on the sand alone. The proctors were followed by regular and on-going compaction testing.

- Commencement of rough grading of the north, northeastern and southeastern side slopes of the landfill.
- Assembly of the temporary Water Treatment Plant.
- Submittal of the Soil Erosion and Sedimentation Control (SESC) Application to the Allegan County Health Department.
- The revised Quality Assurance Project Plant (QAPP), requesting Columbia Analytical Services to be able to conduct all parameter groups associated with the analytical analysis as part of the verification sampling program at the Site, was submitted to U.S. EPA on May 13, 2010.

#### 2. DATA RECEIVED

- Initial Proctor testing results for the following samples was submitted to U.S. EPA on May 12, 2010:
  - 1. Fly Ash obtained from the berm of the existing landfill initial moisture content 37 percent
  - 2. Paper residuals obtained from the Asphalt Plant Property area initial moisture content 136 percent
  - 3. Paper residuals (from the Asphalt Plant Property) modified by addition of 2 percent Portland Cement and 6 percent common fill initial moisture content after mixing 97 percent.

The memorandum summarizing the results for the above noted samples is provided in Attachment A

- Additional Proctor testing was preformed on the following representative samples of paper residuals beginning on May 27, 2010:
  - 1. Mixed-Soil material comprised of topsoil, fly ash, paper residuals and sand obtained from the lift placed for compaction.
  - 2. Sand material obtained from the berms of the existing landfill.

## Remedial Design and Remedial Action 12th Street Landfill, Operable Unit No. 4 Ostego, Michigan

The memorandum summarizing the results for the above noted samples is provided in Attachment B

- Analytical laboratory results for the three 55-gallon steel drums containing investigation derived liquid waste (approximately 15 gallons) have been obtained. The water was determined to be non-hazardous and non-TSCA regulated. A copy of the laboratory report is provided in Attachment C.
- The two (2) partial drums of investigation derived solid waste (paper residuals and Geoprobe macro-core sand catchers/caps) were emptied onto the Site and mixed with the other paper residuals. The drums were crushed and buried with other materials at the Site.

## 3. MODIFICATIONS TO WORK PLANS OR OTHER SCHEDULES PROPOSED TO, OR APPROVED BY, THE U.S. EPA

- No modification to work plans or the project schedule has been made during this reporting period.
- A design variance submitted to U.S. EPA, in a letter dated May 12, 2010, for the use of an
  alternative silt fence material as the outer silt fence row. Based on the limited available
  supply of the specified silt fence material, CRA requested that another alternative silt fence
  material be incorporated into the project works, in order to maintain and meet the project
  schedule.

#### 4. PROBLEMS ENCOUNTERED AND PLANNED RESOLUTION

Based on field conditions, the materials excavated from the on-property wetlands have
consisted of a more heterogeneous mixture of paper residuals, sand, fly ash and wetland
organics (i.e., vegetation, peat, and soil) than has been anticipated. The initial compaction
test results were found to not meet 90 percent compaction, in accordance with the design
specifications and based on the Proctor test results for paper residuals.

To resolve this issue, CRA Services began thoroughly tilling/disking the heterogeneous materials, with a piece of agricultural equipment, during the placement and compaction of each lift across the landfill. The tilling/disking homogenized the materials and assisted in drying the materials out prior to compaction. An additional Proctor test was then performed on a representative sample of the heterogeneous mixture. Based on the Proctor

CRA 056393 Page 3 of 4

## Remedial Design and Remedial Action 12th Street Landfill, Operable Unit No. 4 Ostego, Michigan

test results for the representative sample, all field testing have yielded greater than 90 percent compaction.

It should be noted that during this reporting period, work at the Site was stopped due to
inclement weather conditions for a total of five days; however CRA Services has remained
slightly ahead of schedule

### 5. WORK ANTICIPATED DURING THE NEXT REPORTING PERIOD

- In accordance with the RAWP, the following field activities are scheduled to start during the June 2010 reporting period:
  - Continue relocating waste residuals from Wetland Area on Site
  - Backfill wetland area on Site
  - Construct temporary access road to access the Asphalt Plant Property, as necessary
  - Begin relocating waste residuals from the Asphalt Plant Property
  - Commence Verification Sampling Program on the excavated areas of the Asphalt Plant Property

#### 6. ANTICIPATED DEVELOPMENT WITH WORK DURING THE NEXT PERIOD

- Continue to hold weekly conference calls and/or meetings between U.S. EPA and Project Technical Team.
- A meeting has been tentatively scheduled for September 8, 2010, to discuss the start of the liner installation

#### 7. OTHER RELEVANT INFORMATION

It should be noted that due to inclement weather conditions, the Site will shut down all
major operations for the week of June 9 through to June 16, 2010. During this time CRA
Services will remain at the Site, with an adjusted work force, to conduct inspections and
maintenance of the Site, specifically the soil erosion and sedimentation controls

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## ATTACHMENT A

MAY 12, 2010 MEMORANDUM INITIAL PROCTOR RESULTS



651 Colby Drive, Waterloo, Ontario, Canada N2V 1C2 Telephone: (519) 884-0510 Fax: (519) 884-0525

www.CRAworld.com

To:

Greg Carli

Ref. No.:

056393

FROM:

Aaron Stadnyk/Hassan Gilani/cs/3

DATE:

May 12, 2010

CC:

Rick Heokstra, Jodie Dembowske, Pete Lewis, Renee Pionk

RE:

Proctor Test Results - Remedial Action 12th Street Landfill Operable Unit No. 4

Allied Paper, Inc./Portage Creek/Kalamazoo River Superfund Site

Allegan and Kalamazoo County

The following memorandum has been prepared to document the results of the Proctor Tests that were performed at the 12th Landfill Operable Unit No. 4 of the Allied Paper/Portage Creek/Kalamazoo River Superfund Site (Site). The following was prepared in consultation with Inspec-Sol.

In order to determine the moisture-density relationships of the on-Site materials for compaction control, standard Proctor tests were carried out in accordance with the ASTM Standard D 698 on the following three on-site samples:

- 1. Fly Ash obtained from the berm of the existing landfill initial (in-situ) moisture content 37 percent
- 2. Paper sludge material obtained from the Asphalt Plant Property area in-situ moisture content 136 percent
- 3. Same sample as #2 (paper sludge) modified by addition of 2 percent Portland Cement and 6 percent common fill initial moisture content after modification 97 percent

The first test performed on Sample 1 - Fly Ash was carried out using the normal testing procedure, involving adding moisture to the material for each stage of the test until a suitable curve showing maximum dry density (MDD) and optimum moisture content (OMC) values of 48.4 pounds per cubic foot (pcf) and 55 percent respectively were obtained.

For Samples 2 and 3, the normal testing procedure was modified to determine the moisture-density relationship of paper sludge and modified paper sludge materials. The materials were air dried for each stage of the respective Proctor tests from the high (in-situ or initial) to lower moisture values. The materials thus air dried were then compacted using Method A of ASTM D698. For paper sludge material the MDD is 56.5 pcf and the OMC is 60 percent. For the modified paper sludge material the MDD is 57.8 pcf and the OMC is 38 percent.

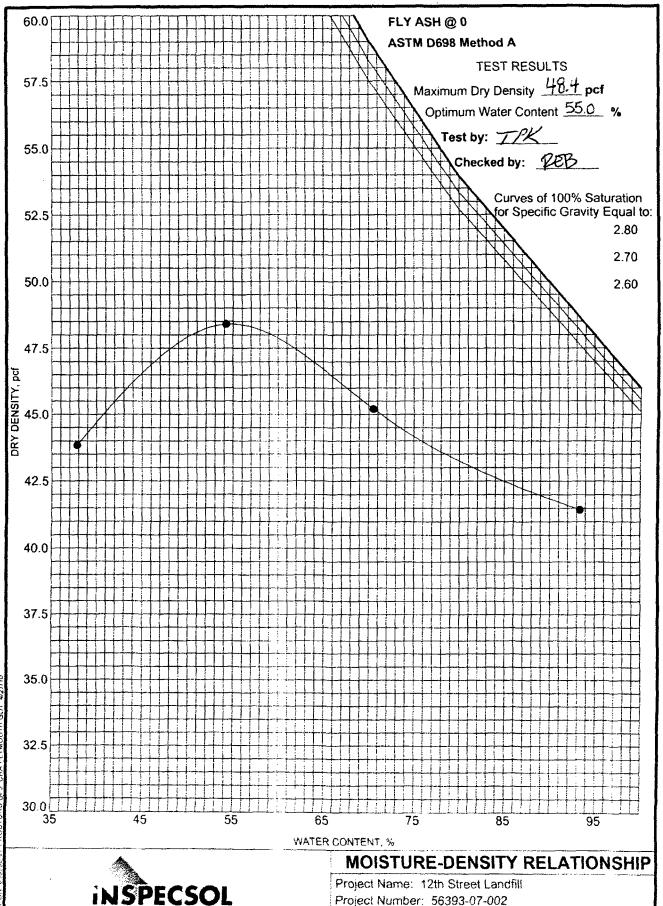
The Proctor Test results are provided in Attachment A. It is noted here that for the paper sludge and modified paper sludge materials, it typically took one to two days of air-drying for each stage of 20 to 30 percent reduction in the moisture content.

A review of the above described test procedure shows that addition of modifying agents did not increase the MDD significantly nor reduced the overall test time, therefore, paper sludge material without additives can be used.



ATTACHMENT A

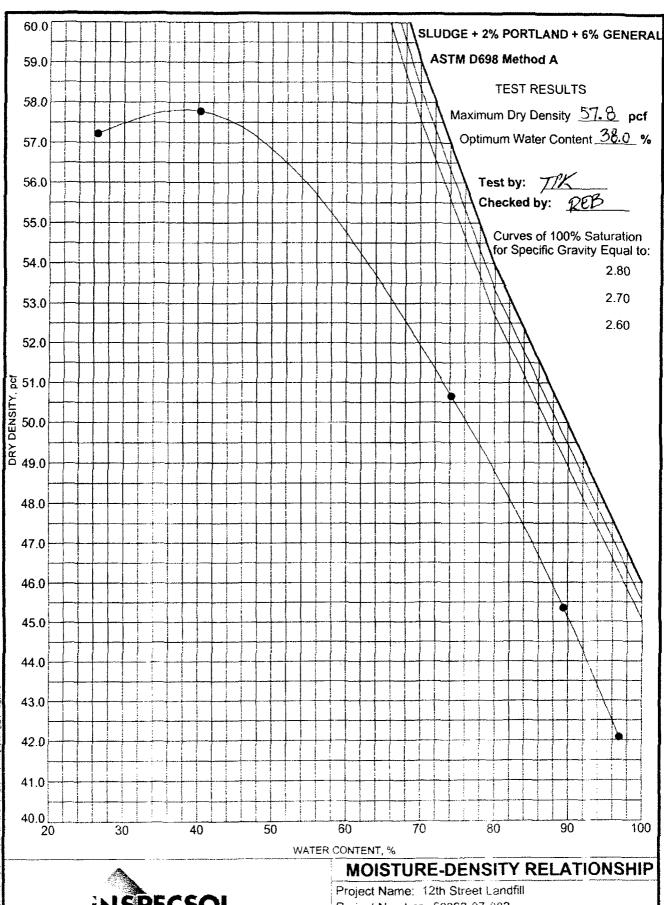
PROCTOR TEST RESULTS





Project Number: 56393-07-002

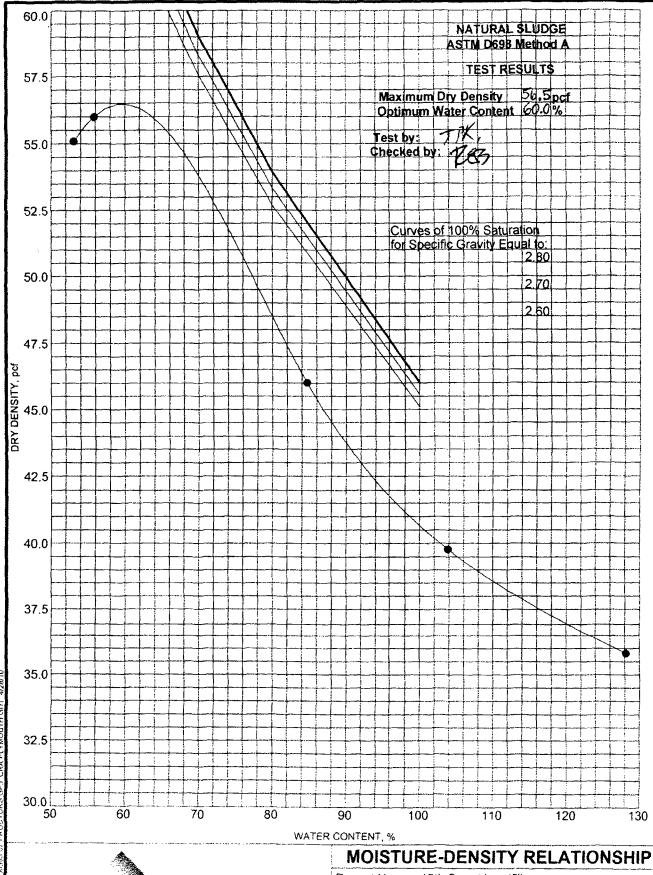
Client: Weyerhauser Location: Ostego, MI





Project Number 56393-07-002

Client: Weyerhauser Location: Ostego, MI





Project Name: 12th Street Landfill Project Number: 56393-07-002

Client: Weyerhauser Location: Ostego, MI

## ATTACHMENT B

JUNE 10, 2010 MEMORANDUM SUPPLEMENTAL PROCTOR RESULTS

651 Colby Drive, Waterloo, Ontario, Canada N2V 1C2 Telephone: (519) 884-0510 Fax: (519) 884-0525

www.CRAworld.com

To:

Greg Carli

REF. NO.:

056393

FROM:

Aaron Stadnyk/Hassan Gilani/cs/5

DATE:

June 10, 2010

CC:

Rick Hoekstra

Jodie Dembowske

Pete Lewis

Renee Pionk, CRA.

RE:

**Proctor and Field Density Test Results** 

12th Street Landfill - Operable Unit No. 4

Allied Paper, Inc./ Portage Creek/ Kalamazoo River Superfund Site

Plainwell, Michigan

The following memorandum has been prepared to document the results of the Proctor Tests that were performed at the 12th Landfill Operable Unit No. 4 of the Allied Paper/Portage Creek/Kalamazoo River Superfund Site (Site). The following was prepared in consultation with Inspec-Sol.

Two Proctor (ASTM D 698) have been carried out in addition to the three Proctor test results submitted with the Memorandum dated May 12, 2010. The Proctor test results were carried out on the samples of the following on-site materials:

- 1. Mixed-Soil material comprised of topsoil, fly ash, paper residuals, and sand obtained from the lift placed for compaction
- 2. Sand material obtained from the berms of the existing landfill

The maximum dry density (MDD) of the mixed material was determined to be 97.5 pcf with an OMC of 18.9 percent. The MDD of the sand was determined to be 123.1 pounds per cubic foot (pcf) with an optimum moisture content (OMC) of 10.8 percent. The test results are attached. A summary of the Proctor test results to-date is also attached.

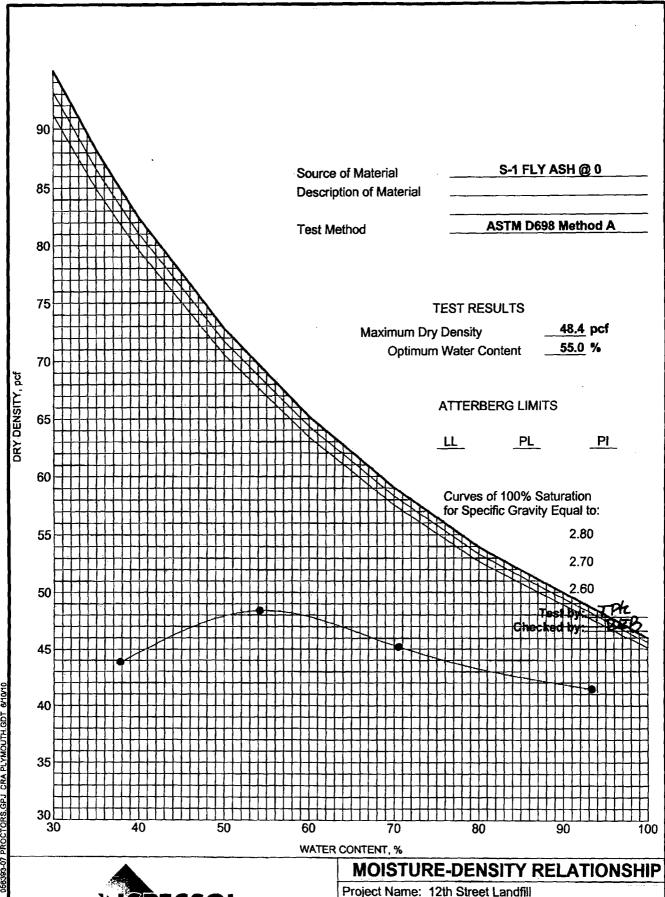
The results of the in-situ density test results conducted on May 24, 2010 and June 4, 2010 are also attached for lifts No. 1 to 4 placed in the centre to north-east portion of the landfill. A plan showing the gridline locations referenced in the density test results sheets is also attached. A review of the test results shows that the lifts have been compacted to at least 90 percent of the MDD as required by the project specifications.



PROJECT .:	12th Street Landfill	CLIENT:	Weyerhaeuser Company
LOCATION:	Plainwell, Michigan	PROJECT NO.:	56393

## **Summary of Laboratory Standard Proctor Test Results**

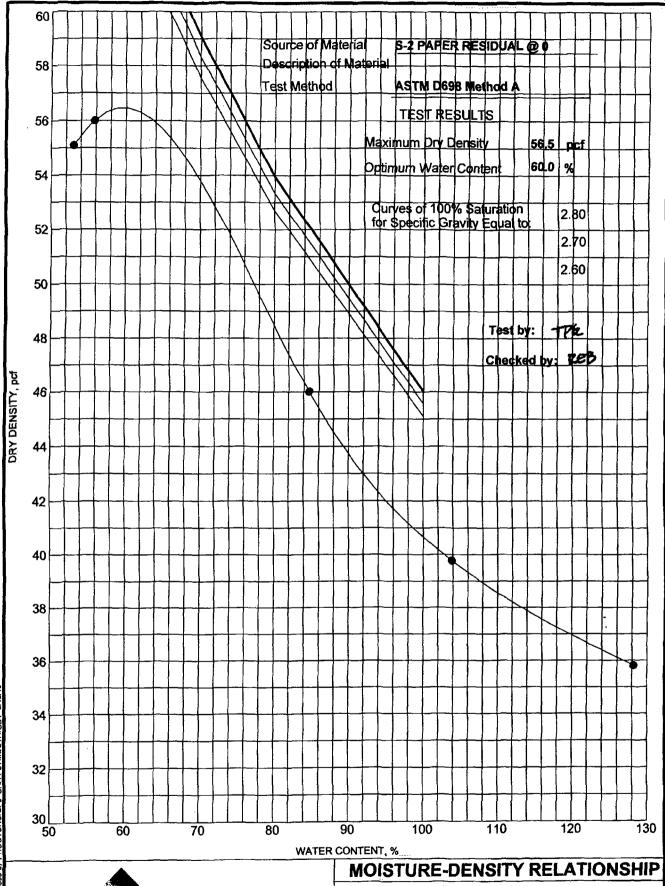
Material No.	Date Sampled	Material Description	Maximum Dry Density (ASTM D 698)	Optimum Moisture Content
			(lbs/ft3)	(%)
1.	April 20, 2010	Paper Residuals (Asphalt Plant Area)	56.5	60.0
2.	April 20, 2010	Fly Ash (Landfill berm)	48.4	55.0
3	April 20, 2010	Paper Residuals+2%Portalnd cement+6% common fill	57.8	38.0
4.	May 27, 2010	Sand	123.1	10.8
5.	May 28, 2010	Topsoil+Flyash+Sand+Paper Residuals	97.5	18.9





Project Name: 12th Street Landfill Project Number: 56393-07-002

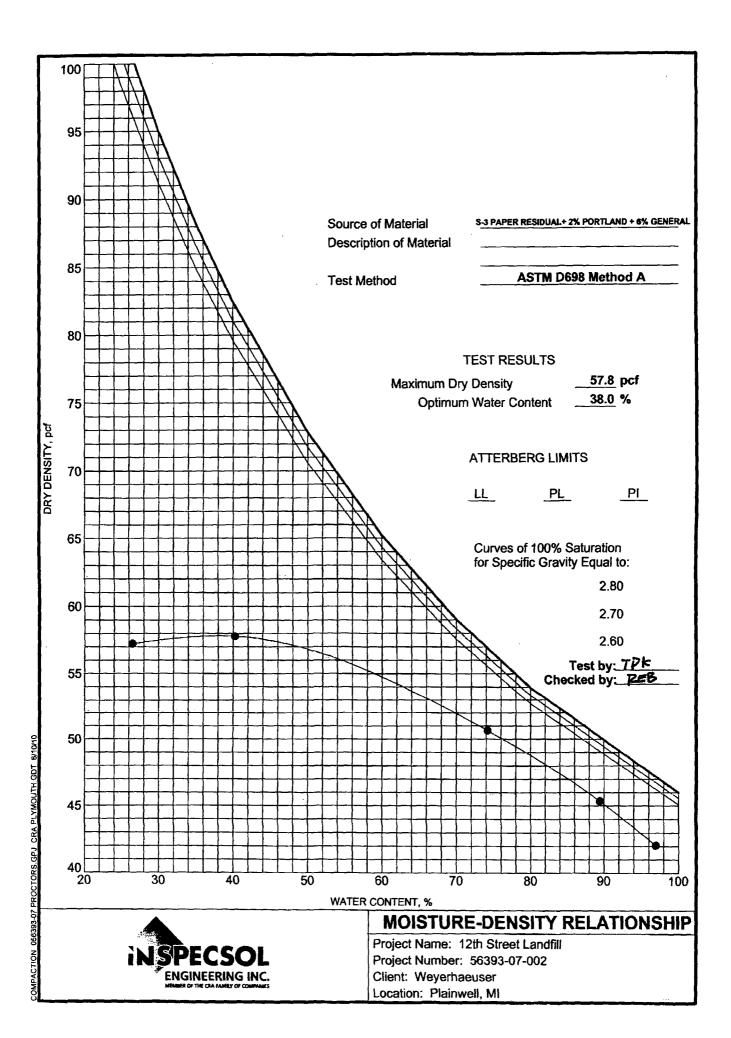
Client: Weyerhaeuser Location: Plainwell, MI

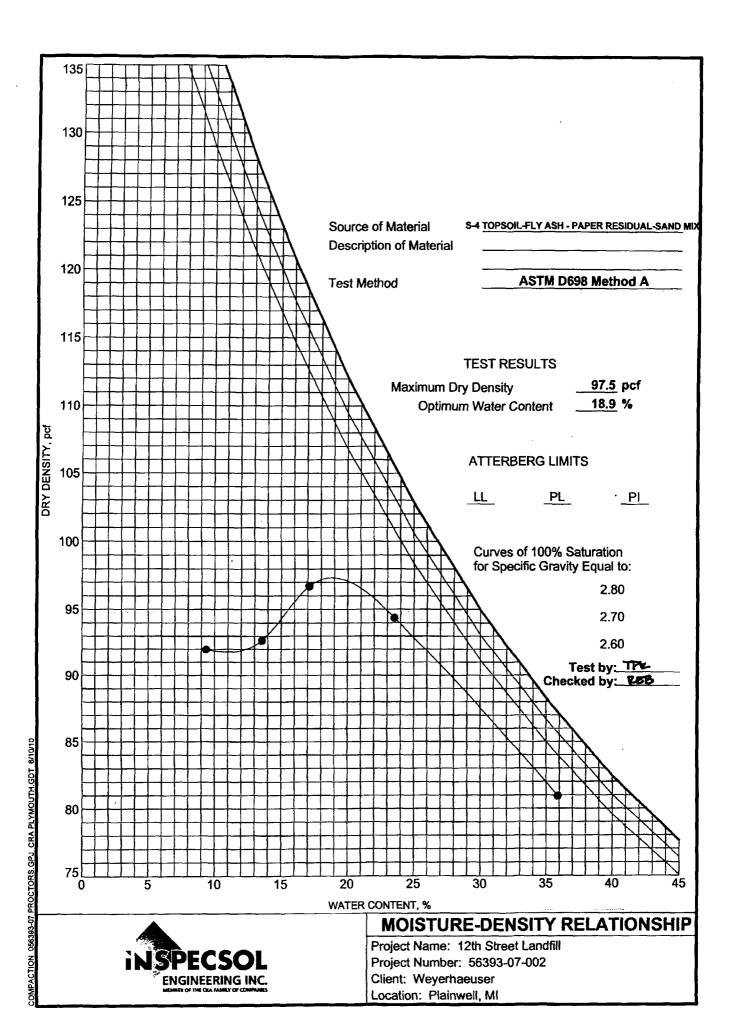


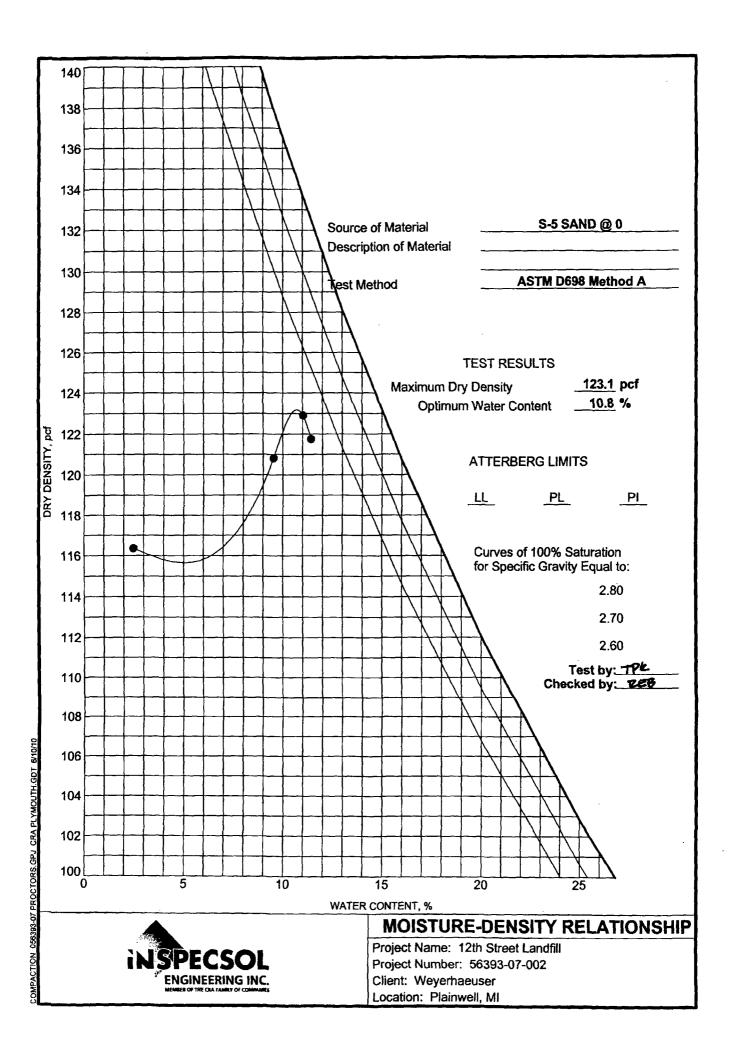


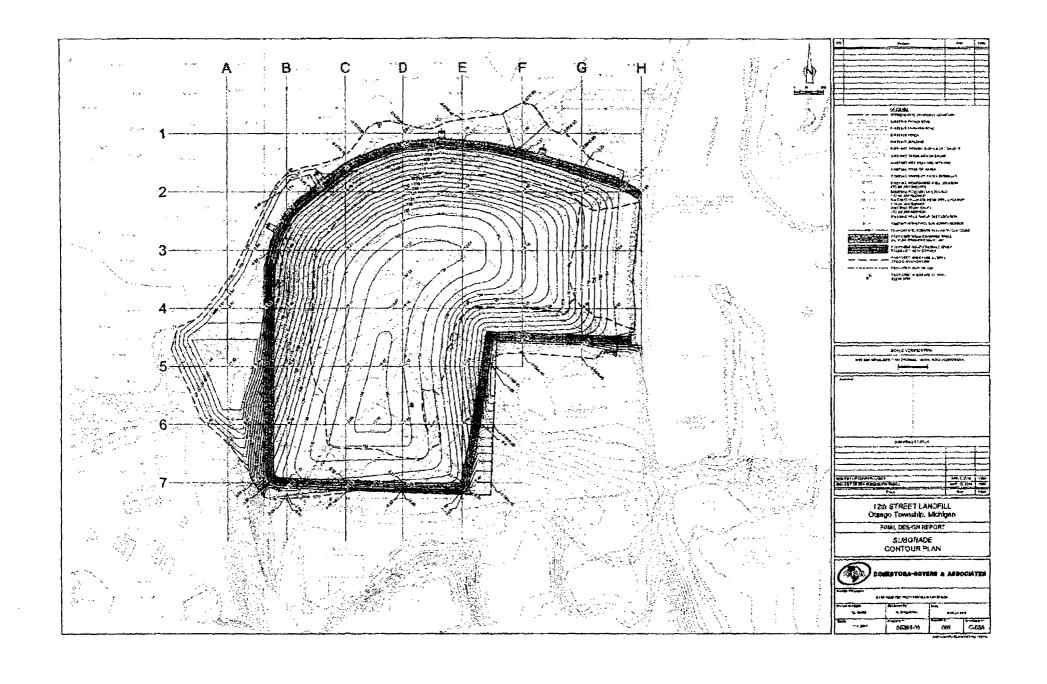
Project Name: 12th Street Landfill Project Number: 56393-07-002

Client: Weyerhaeuser Location: Plainwell, MI









#### IN-PLACE DENSITY TEST



DATE: 5-24-10

PROJECT NO: 0576393
PROJECT: 12TH ST LAND FILL

MOISTURE STANDARD 663

DAILY MOISTURE STANDARD: / 6D

CLIENT.

DENSITY STANDARD: 2502

DAILY DENSITY STANDARD 2437

GAUGE NO.: 31097

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5	6-D			97.5					93,5		6-4-10
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9	5.5-E	2	3	97,5	18.9	112.0	17.8	95.0	97.5		
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NSPECSOL ENGINEERING INC.

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# ATTACHMENT C

ANALYTICAL LABORATORY REPORT



#### ANALYTICAL REPORT

PROJECT NO. 56393-07-0001

12TH STREET LANDFILL

Lot #: A0D290512

Paul Wiseman

Conestoga Rovers & Assoc., Inc 14496 Sheldon Rd Suite 200 Plymouth, MI 48170

TESTAMERICA LABORATORIES, INC.

Denise D. Heckler

Project Manager

denise.heckler@testamericainc.com

Approved for release, Denise D. Heckler Project Manager 5/13/2010 9:00 AM

May 12, 2010



TestAmerica North Canton 4101 Shuffel Street NW, North Canton, OH 44720 Tel (330)497-9396 Fax (330)497-0772 www.testamericainc.com



## ATTACHMENT C

ANALYTICAL LABORATORY REPORT

#### CASE NARRATIVE

A0D290512

The following report contains the analytical results for one water sample submitted to TestAmerica North Canton by Conestoga-Rovers & Associates, Inc. from the 12th Street Landfill Site, project number 56393-07-0001. The sample was received April 27, 2010, according to documented sample acceptance procedures. Additional sample was received on April 29, 2010.

TestAmerica utilizes USEPA approved methods in all analytical work. The sample presented in this report was analyzed for the parameter(s) listed on the analytical methods summary page in accordance with the method(s) indicated. A summary of QC data for these analyses is included at the back of the report.

TestAmerica North Canton attests to the validity of the laboratory data generated by TestAmerica facilities reported herein. All analyses performed by TestAmerica facilities were done using established laboratory SOPs that incorporate QA/QC procedures described in the applicable methods. TestAmerica's operations groups have reviewed the data for compliance with the laboratory QA/QC plan, and data have been found to be compliant with laboratory protocols unless otherwise noted below.

The test results in this report meet all NELAP requirements for parameters for which accreditation is required or available. Any exceptions to NELAP requirements are noted in this report. Pursuant to NELAP, this report may not be reproduced, except in full, without the written approval of the laboratory.

All parameters were evaluated to the reporting limit.

Please refer to the Quality Control Elements Narrative following this case narrative for additional quality control information.

If you have any questions, please call the Project Manager, Denise D. Heckler, at 330-497-9396.

This report is sequentially paginated. The final page of the report is labeled as "END OF REPORT."

## **CASE NARRATIVE (continued)**

## SUPPLEMENTAL QC INFORMATION

#### SAMPLE RECEIVING

The temperature of the cooler upon sample receipt was 1.0°C.

See TestAmerica's Cooler Receipt Form for additional information.

#### **GC/MS VOLATILES**

The matrix spike/matrix spike duplicate(s) for batch(es) 0124450 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

#### **GC/MS SEMIVOLATILES**

The analytical results met the requirements of the laboratory's QA/QC program.

#### **PESTICIDES-8081**

The analytical results met the requirements of the laboratory's QA/QC program.

#### POLYCHLORINATED BIPHENYLS-8082

The analytical results met the requirements of the laboratory's QA/QC program.

#### **HERBICIDES-8151**

There were no client requested Matrix Spike/Matrix Spike Duplicate (MS/MSD) samples in batch(es) 0126038. Therefore, the laboratory has included a Laboratory Control Sample Duplicate (LCSD) in the QC batch. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system.

#### **METALS**

The analytical results met the requirements of the laboratory's QA/QC program.

#### **GENERAL CHEMISTRY**

The matrix spike/matrix spike duplicate(s) for batch(es) 0120301 had recoveries outside acceptance limits. However, since the associated method blank(s) and laboratory control sample(s) were in control, no corrective action was necessary.

#### **QUALITY CONTROL ELEMENTS NARRATIVE**

TestAmerica conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program, which is described in detail in QA Policy, QA-003. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data. Program or agency specific requirements take precedence over the requirements listed in this narrative.

#### **OC BATCH**

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. TestAmerica North Canton requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples.

For SW846/RCRA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

For 600 series/CWA methods, QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE (MS). An MS is prepared and analyzed at a 10% frequency for GC Methods and at a 5% frequency for GC/MS methods.

#### LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. Multi peak responders may not be included in the target spike list due to co-elution. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. All control analytes indicated by a bold type in the LCS must meet acceptance criteria. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. Comparison of only the failed parameters from the first batch are evaluated. The only exception to the rework requirement is that if the LCS recoveries are biased high and the associated sample is ND (non-detected) for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). If the RPD fails for an LCS/LCSD and yet the recoveries are within acceptance criteria, the batch is still acceptable.

#### METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except under the following circumstances:

• Common organic contaminants may be present at concentrations up to 5 times the reporting limits. Common metals contaminants may be present at concentrations up to 2 times the reporting limit, or the reported blank concentration must be twenty fold less than the concentration reported in the associated environmental samples. (See common laboratory contaminants listed in the table.)

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals ICP-MS	Metals ICP Trace
Methylene Chloride,	Phthalate Esters	Copper, Iron, Zinc,	Copper, Iron, Zinc, Lead
Acetone, 2-Butanone	]	Lead, Calcium,	
	]	Magnesium, Potassium,	
1	]	Sodium, Barium,	
		Chromium, Manganese	

#### QUALITY CONTROL ELEMENTS NARRATIVE (continued)

- Organic blanks will be accepted if compounds detected in the blank are present in the associated samples at levels 10 times the blank level. Inorganic blanks will be accepted if elements detected in the blank are present in the associated samples at 20 times the blank level.
- Blanks will be accepted if the compounds/elements detected are not present in any of the associated environmental samples.

Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

#### MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. Due to the potential variability of the matrix of each sample, the MS/MSD results may not have an immediate bearing on any samples except the one spiked; therefore, the associated batch MS/MSD may not reflect the same compounds as the samples contained in the analytical report. When these MS/MSD results fail to meet acceptance criteria, the data is evaluated. If the LCS is within acceptance criteria, the batch is considered acceptable.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch. However, a Sample Duplicate is less likely to provide usable precision statistics depending on the likelihood of finding concentrations below the standard reporting limit. When the Sample Duplicate result fails to meet acceptance criteria, the data is evaluated.

For certain methods (600 series methods/CWA), a Matrix Spike is required in place of a Matrix Spike/Matrix Spike Duplicate (MS/MSD) or Matrix Spike/Sample Duplicate (MS/DU).

The acceptance criteria do not apply to samples that are diluted.

#### SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample is spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

If surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank, and the associated sample(s) are ND, the batch is acceptable. Otherwise, if the LCS, LCSD, or Method Blank surrogate(s) fail to meet recovery criteria, the entire sample batch is reprepared and reanalyzed. If the surrogate recoveries are outside criteria for environmental samples, the samples will be reprepared and reanalyzed unless there is objective evidence of matrix interference or if the sample dilution is greater than the threshold outlined in the associated method SOP.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported.

For the GC/MS BNA methods, the surrogate criterion is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide and PCB methods, the surrogate criterion is that one of two surrogate compounds must meet acceptance criteria. The second surrogate must have a recovery of 10% or greater.



**TestAmerica Certifications and Approvals:** 

The laboratory is certified for the analytes listed on the documents below. These are available upon request. California (#01144CA), Connecticut (#PH-0590), Florida (#E87225),

Illinois (#200004), Kansas (#E10336), Minnesota (#39-999-348), New Jersey (#OH001), New York (#10975), Nevada (#OH-000482008A), OhioVAP (#CL0024), Pennsylvania (#008), West Virginia (#210), Wisconsin (#999518190), NAVY, ARMY, USDA Soil Permit

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## **EXECUTIVE SUMMARY - Detection Highlights**

## A0D290512

PARAMETER	RESULT	REPORTIN LIMIT	UNITS	ANALYTICAL METHOD
WW-056393-042610-JMD-001 04/26/	10 10:00 001			
Flashpoint	>180		deg F	SW846 1010
Total Solids (Residue)	270	10	mg/L	MCAWW 160.3
Corrosivity	8.4		No Units	SW846 9045A

## **ANALYTICAL METHODS SUMMARY**

## A0D290512

PARAMETER	ANALY METHO	
Chlorinated Herbicides by GC		8151A
Corrosivity Cyanide, Total		9045A 9012A
Inductively Coupled Plasma (ICP) Metals Mercury in Liquid Waste (Manual Cold-Vapor)		6010B 7470A
Organochlorine Pesticides Pensky-Martens Method for Determining Ignitability		8081A 1010
PCBs by SW-846 8082 Semivolatile Organic Compounds by GC/MS	SW846	
Sulfides, Total 9030B/9034	SW846	9030B/9034
Total Residue (TS) Volatile Organics by GC/MS		160.3 8260B

#### References:

MCAWW	"Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.
S <b>W</b> 846	"Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

## **SAMPLE SUMMARY**

#### A0D290512

WO # SAMPLE# CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
LOQN1 001 WW-056393-042610-JMD-001	04/26/10	10:00
North (a)		

#### NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

#### Client Sample ID: WW-056393-042610-JMD-001

#### TCLP GC/MS Volatiles

Lot-Sample #:	A0D290512-001	Work Order	#: L0QN11AA	Matrix WW
Date Sampled:	04/26/10 10:00	Date Receive	ed. : 04/27/10	

Leach Date....: 05/03/10 Prep Date....: 05/04/10 Analysis Date..: 05/04/10

Dilution Factor: 1

**Method.....** SW846 8260B

	REPORTING	
RESULT	LIMIT	UNITS
ND	0.025	mg/L
ND	0.25	mg/L
ND	0.025	mg/L
ND	0.070	mg/L
ND	0.070	mg/L
ND	0.050	mg/L
ND	0.025	mg/L
PERCENT	RECOVERY	
RECOVERY	LIMITS	
93	(86 - 125)	
109	(80 - 122)	
112	(90 - 122)	
102	(84 - 125)	
	ND N	RESULT         LIMIT           ND         0.025           ND         0.025           ND         0.025           ND         0.025           ND         0.025           ND         0.070           ND         0.070           ND         0.050           ND         0.025           PERCENT         RECOVERY           PERCENT         RECOVERY           LIMITS           93         (86 - 125)           109         (80 - 122)           112         (90 - 122)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

#### Client Sample ID: WW-056393-042610-JMD-001

#### TCLP GC/MS Semivolatiles

Lot-Sample #...: A0D290512-001 Work Order #...: LOQN11AC Matrix..... WW

Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10

Leach Date....: 05/03/10 Prep Date....: 05/04/10 Analysis Date..: 05/05/10

Leach Batch #...: P012312 Prep Batch #...: 0124054

Dilution Factor: 1

Method.....: SW846 8270C

		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
o-Cresol	ND	0.0040	mg/L
m-Cresol & p-Cresol	ND	0.040	mg/L
1,4-Dichlorobenzene	ND	0.0040	mg/L
2,4-Dinitrotoluene	ND	0.020	mg/L
Hexachlorobenzene	ND	0.020	mg/L
Hexachlorobutadiene	ND	0.020	mg/L
Hexachloroethane	ND	0.020	mg/L
Nitrobenzene	ИD	0.0040	mg/L
Pentachlorophenol	ND	0.040	mg/L
Pyridine	ND	0.020	mg/L
2,4,5-Trichloro-	ND	0.020	mg/L
phenol			
2,4,6-Trichloro-	ND	0.020	mg/L
phenol			
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	_

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Nitrobenzene-d5	42	(27 - 110)
2-Fluorobiphenyl	46	(20 - 110)
Terphenyl-d14	69	(44 - 110)
Phenol-d5	37	(10 - 110)
2-Fluorophenol	46	(10 - 110)
2,4,6-Tribromophenol	43	(28 - 110)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

#### Client Sample ID: WW-056393-042610-JMD-001

#### TCLP GC Semivolatiles

Lot-Sample #: A0D290512-0	1 Work Order #: LOQN11AD	Matrix: WW
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Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10

Dilution Factor: 1

Method.....: SW846 8081A

		REPORTING	
PARAMETER	RESULT	LIMIT	UNITS
Chlordane (technical)	ND	0.0050	mg/L
Endrin	ND	0.00050	mg/L
Heptachlor	ND	0.00050	mg/L
Heptachlor epoxide	ND	0.00050	mg/L
Lindane	ND ·	0.00050	mg/L
Methoxychlor	ND	0.0010	mg/L
Toxaphene	ND	0.020	mg/L
	PERCENT	RECOVERY	
SURROGATE	RECOVERY	LIMITS	-
Decachlorobiphenyl	80	(31 - 115)	
Tetrachloro-m-xylene	84	(47 - 110)	

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

#### Client Sample ID: WW-056393-042610-JMD-001

#### GC Semivolatiles

(27 - 130) (10 - 127)

Lot~Sample :	<b> :</b>	A0D290512-001	Work Order	# T.OC	ON11AU	Matrix	: WW

Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10 Prep Date....: 04/30/10 Analysis Date..: 05/03/10

Prep Batch #...: 0120033

Tetrachloro-m-xylene

Decachlorobiphenyl

Dilution Factor: 1 Method.....: SW846 8082

		REPORTIN	REPORTING	
PARAMETER	RESULT	LIMIT	UNITS	
Aroclor 1016	ND	1.0	ug/L	
Aroclor 1221	ND	1.0	ug/L	
Aroclor 1232	ND	1.0	ug/L	
Aroclor 1242	ND	1.0	ug/L	
Aroclor 1248	ND	1.0	ug/L	
Aroclor 1254	ND	1.0	${\tt ug/L}$	
Aroclor 1260	ND	1.0	ug/L	
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		

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# Conestoga-Rovers & Associates, Inc.

# Client Sample ID: WW-056393-042610-JMD-001

#### TCLP GC Semivolatiles

Lot-Sample #:	A0D290512-001	Work Order #:	LOQN12AE	Matrix:	WW
Date Sampled:	04/26/10 10:00	Date Received:	04/27/10		
Leach Date:	05/03/10	Prep Date:	05/06/10	Analysis Date:	05/07/10

Leach Batch #..: P012312 Prep Batch #...: 0126038

Dilution Factor: 1

Method.....: SW846 8151A

REPORTING

PARAMETER	RESULT	LIMIT	UNITS
2,4-D	ND	0.50	mg/L
2,4,5-TP (Silvex)	ND	0.10	mg/L
	PERCENT	RECOVERY	

SURROGATE RECOVERY LIMITS
2,4-Dichlorophenylacetic acid 74 (37 - 116)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

# Conestoga-Rovers & Associates, Inc.

# Client Sample ID: WW-056393-042610-JMD-001

#### TCLP Metals

Lot-Sample #...: A0D290512-001 Matrix.....: WW

Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10

Leach Date....: 05/03/10 Leach Batch #..: P012302

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOL	)	PREPARATION- ANALYSIS DATE	WORK ORDER #
Prep Batch #		0.50	/ T	GE10.4.6	C010D	05/03 05/04/10	1.00N117C
Arsenic	ND	0.50 Dilution Factor	mg/L or: 1	SW846	6010B	05/03-05/04/10	LUQNITAG
Barium	ND	10.0 Dilution Facto	mg/L or: 1	SW846	6010B	05/03-05/04/10	LOQN11AH
Cadmium	ND	0.10 Dilution Factor		SW846	6010B	05/03-05/04/10	L0QN11AJ
Chromium	ND	0.50 Dilution Facto	-	SW846	6010B	05/03-05/04/10	LOQN11AK
Lead	ND	0.50 Dilution Facto	_	SW846	6010B	05/03-05/04/10	LOQN11AL
Selenium	ND	0.25 Dilution Factor	٥.	SW846	6010B	05/03-05/04/10	L0QN11AM
Silver	ND	0.50 Dilution Facto	mg/L or: 1	SW846	6010B	05/03-05/04/10	LOQN11AN
Mercury	ND	0.0020 Dilution Facto	mg/L or: 1	SW846	7470A	05/03-05/04/10	L0QN11AF
NOTE(S):							

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

# Conestoga-Rovers & Associates, Inc.

# Client Sample ID: WW-056393-042610-JMD-001

# General Chemistry

Lot-Sample #...: A0D290512-001 Work Order #...: L0QN1 Matrix.....: WW

Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10

						PREPARATION-	PREP
PARAMETER	RESULT	RL	UNITS	METHO	D	ANALYSIS DATE	BATCH #
Acid-soluble sulfide	ND	3.0	mg/L	SW846	9030B/9034	04/30/10	0120302
		Dilution Fact	or: 1				
Corrosivity	8.4		No Units	SW846	9045A	04/27/10	0119431
		Dilution Fact	or: 1				
Cyanide, Total	ND	0.010	mg/L	S <b>W</b> 846	9012A	05/10/10	0130227
		Dilution Facto	or: 1				
Flashpoint	>180		deg F	SW846	1010	05/10/10	0130398
		Dilution Facto	or: 1				
Total Solids (Residue)	270	10	mg/L	MCAWW	160.3	05/03-05/05/10	0123092

Dilution Factor: 1



# QUALITY CONTROL SECTION

#### TCLP GC/MS Volatiles

Client Lot #...: A0D290512 Work Order #...: L0WJX1AA Matrix.....: SOLID

MB Lot-Sample #: A0E030000-068

Leach Date....: 05/03/10 Prep Date....: 05/04/10 Analysis Date..: 05/04/10

Leach Batch #..: P012301 Prep Batch #...: 0124450

Dilution Factor: 1

		REPORTI	NG	
PARAMETER	RESULT	LIMIT	UNITS	METHOD
Benzene	ND	0.025	mg/L	SW846 8260B
2-Butanone (MEK)	ND	0.25	mg/L	SW846 8260B
Carbon tetrachloride	ND	0.025	mg/L	SW846 8260B
Chlorobenzene	ND	0.025	mg/L	SW846 8260B
Chloroform	ND	0.025	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.025	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.070	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.070	mg/L	SW846 8260B
Trichloroethylene	ND	0.050	mg/L	SW846 8260B
Vinyl chloride	ND	0.025	mg/L	SW846 8260B
	PERCENT	RECOVER	Y	
SURROGATE	RECOVERY	LIMITS		
Dibromofluoromethane	98	(86 - 12	25)	
1,2-Dichloroethane-d4	113	(80 - 12	22)	
Toluene-d8	115	(90 - 12	22)	
4-Bromofluorobenzene	105	(84 - 12	25)	

NOTE(S):

#### LABORATORY CONTROL SAMPLE DATA REPORT

# GC/MS Volatiles

Client Lot #...: A0D290512 Work Order #...: L01FW1AA Matrix.....: SOLID

LCS Lot-Sample#: A0E040000-450

Prep Batch #...: 0124450

Dilution Factor: 1

PARAMETER Benzene	SPIKE AMOUNT 1.0	MEASURED AMOUNT 0.94	UNITS	PERCENT RECOVERY	METHOD	22.COD
<del>-</del>			mg/L	94	SW846 8	
2-Butanone (MEK)	2.0	2.2	mg/L	110	SW846 8	
Carbon tetrachloride	1.0	1.0	mg/L	100	SW846 8	3260B
Chlorobenzene	1.0	0.97	mg/L	97	SW846 8	3260B
Chloroform	1.0	0.95	mg/L	95	SW846 8	3260B
1,2-Dichloroethane	1.0	1.1	mg/L	108	SW846 8	3260B
1,1-Dichloroethylene	1.0	1.1	mg/L	113	SW846 8	3260B
Tetrachloroethylene	1.0	0.86	mg/L	86	SW846 8	3260B
Trichloroethylene	1.0	0.83	mg/L	83	SW846 8	3260B
Vinyl chloride	1.0	0.97	mg/L	97	SW846 8	3260B
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS			
Dibromofluoromethane		96	$\frac{111113}{(86 - 124)}$	-		
1,2-Dichloroethane-d4		105	(80 - 122)			
Toluene-d8		-				
		103	(90 - 122)			
4-Bromofluorobenzene		102	(84 - 125)			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

#### GC/MS Volatiles

Client Lot #...: A0D290512 Work Order #...: L01FW1AA Matrix.....: SOLID

LCS Lot-Sample#: A0E040000-450

Prep Batch #...: 0124450

Dilution Factor: 1

PARAMETER Benzene 2-Butanone (MEK)	RECOVERY	LIMITS	MEMILOD
			METHOD
2-Butanone (MFK)	94	(76 - 118)	SW846 8260B
2 Butanone (HER)	110	(40 - 110)	SW846 8260B
Carbon tetrachloride	100	(71 - 124)	SW846 8260B
Chlorobenzene	97	(76 - 113)	SW846 8260B
Chloroform	95	(82 - 117)	SW846 8260B
1,2-Dichloroethane	108	(78 - 122)	SW846 8260B
1,1-Dichloroethylene	113	(67 - 128)	SW846 8260B
Tetrachloroethylene	86	(64 - 121)	SW846 8260B
Trichloroethylene	83	(76 - 119)	SW846 8260B
Vinyl chloride	97	(47 - 123)	SW846 8260B
		PERCENT	RECOVERY
SURROGATE		RECOVERY	LIMITS
Dibromofluoromethane		96	(86 - 124)
1,2-Dichloroethane-d4		105	(80 - 122)
Toluene-d8		103	(90 - 122)
4-Bromofluorobenzene		102	(84 - 125)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### MATRIX SPIKE SAMPLE DATA REPORT

#### TCLP GC/MS Volatiles

Client Lot #...: A0D290512 Work Order #...: LOPT31AX-MS Matrix.....: SOLID

MS Lot-Sample #: A0D290449-001 LOPT31A0-MSD

Date Sampled...: 04/28/10 15:15 Date Received..: 04/29/10

Leach Date....: 05/03/10 Prep Date....: 05/04/10 Analysis Date..: 05/04/10

Leach Batch #..: P012301 Prep Batch #...: 0124450

Dilution Factor: 1

	SAMPLE	SPIKE	MEASRD			PERCNT			
PARAMETER	AMOUNT	AMT	AMOUNT	UNITS		RECVRY	RPD	METHO	)
Benzene	ND	1.0	1.0	mg/L		102			8260B
	ND	1.0	1.0	mg/L		103	0.43	SW846	
2-Butanone (MEK)	ND	2.0	2.2	mg/L		110			8260B
	ИД	2.0	2.2	mg/L		110	0.71	SW846	
Carbon tetrachloride	ND	1.0	1.0	mg/L		101			8260B
	ND	1.0	1.1	${\tt mg/L}$		109	7.8	SW846	
Chlorobenzene	ND	1.0	1.0	nng/L		104			826 <b>0</b> B
	ND	1.0	1.1	mg/L		106	1.5		8260B
Chloroform	ND	1.0	1.0	mg/L		100			8260B
	ND	1.0	1.0	mg/L		100	0.79	SW846	
1,2-Dichloroethane	ND	1.0	1.1	mg/L		114			8260B
	ND	1.0	1.1	mg/L		114	0.43	SW846	
1,1-Dichloroethylene	ND	1.0	1.3	mg/L		133 a			8260B
	ND	1.0	1.4	mg/L		137 a	2.9		8260B
Tetrachloroethylene	ND	1.0	1.0	mg/L		102			8260B
	ND	1.0	1.0	mg/L		103	1.5		8260B
Trichloroethylene	0.068	1.0	0.98	mg/L		91			8260B
	0.068	1.0	1.0	mg/L		93	1.3	SW846	
Vinyl chloride	ND	1.0	1.2	mg/L		118			8260B
	ND	1.0	1.2	mg/L		118	0.01	SW846	8260B
			DED COM		יזורד	יו מבוווסס			
CHDDOCAME			PERCENT			COVERY			
SURROGATE Dibromofluoromethane		-	RECOVERY			MITS 6 - 125	<u> </u>		
DIDIOMOTIUOIOMethane			100		•	6 <b>-</b> 125	•		
1,2-Dichloroethane-d4			117			0 - 123			
1,2 Dichiolocchane da			107			0 - 122			
Toluene-d8			112			0 - 122			
10140110 40			112			0 - 122			
4-Bromofluorobenzene			107			4 - 125			
1 Diomora do Lobombolio			108			4 - 125			
					, 0	- +20	′		

## NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

a Spiked analyte recovery is outside stated control limits.

# MATRIX SPIKE SAMPLE EVALUATION REPORT

# TCLP GC/MS Volatiles

Client Lot #...: A0D290512 Work Order #...: L0PT31AX-MS Matrix.....: SOLID

MS Lot-Sample #: A0D290449-001 LOPT31A0-MSD

Date Sampled...: 04/28/10 15:15 Date Received..: 04/29/10

Dilution Factor: 1

	PERCENT	RECOVERY		RPD		
PARAMETER	RECOVERY	LIMITS	RPD	LIMITS	METHO	D
Benzene	102	(76 - 117)			SW846	8260B
	103	(76 - 117)	0.43	(0-30)	SW846	8260B
2-Butanone (MEK)	110	(37 - 110)			SW846	8260B
	110	(37 - 110)	0.71	(0-30)	SW846	8260B
Carbon tetrachloride	101	(72 - 124)			SW846	8260B
	109	(72 - 124)	7.8	(0-30)	SW846	8260B
Chlorobenzene	104	(72 - 114)			SW846	8260B
	106	(72 - 114)	1.5	(0-30)	SW846	8260B
Chloroform	100	(82 - 117)			SW846	8260B
	100	(82 - 117)	0.79	(0-30)	SW846	8260B
1,2-Dichloroethane	114	(80 - 120)			SW846	8260B
	114	(80 ~ 120)	0.43	(0-30)	SW846	8260B
1,1-Dichloroethylene	133 a	(67 ~ 129)			SW846	8260B
	137 a	(67 - 129)	2.9	(0~30)	SW846	8260B
Tetrachloroethylene	102	(60 - 119)				8260B
	103	(60 - 119)	1.5	(0-30)	SW846	8260B
Trichloroethylene	91	(72 - 121)			SW846	8260B
	93	(72 - 121)	1.3	(0-30)	SW846	8260B
Vinyl chloride	118	(54 - 118)			SW846	8260B
	118	(54 - 118)	0.01	(0-30)	SW846	8260B
		PERCENT		RECOVERY		
SURROGATE		RECOVERY		LIMITS		
Dibromofluoromethane		101		(86 - 125)	)	
		100		(86 - 125)	)	
1,2-Dichloroethane-d4		117		(80 - 122)	)	
		107		(80 - 122)	)	
Toluene-d8		112		(90 - 122)	)	
		112		(90 - 122)	)	
4-Bromofluorobenzene		107		(84 - 125)	<b>)</b>	
		108		(84 - 125)	)	

## NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

a Spiked analyte recovery is outside stated control limits.

#### TCLP GC/MS Semivolatiles

Client Lot #...: A0D290512

MB Lot-Sample #: A0E040000-054

Leach Date....: 05/03/10
Leach Batch #..: P012312

Dilution Factor: 1

Work Order #...: LOXML1AA

Prep Date....: 05/04/10
Prep Batch #...: 0124054

- - - - 05/05/10

Analysis Date..: 05/05/10

Matrix..... WATER

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PARAMETER	RESULT	LIMIT	UNITS	METHOD
o-Cresol	ND	0.0040	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.040	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.0040	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.020	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.020	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.020	mg/L	SW846 8270C
Hexachloroethane	ND	0.020	mg/L	SW846 8270C
Nitrobenzene	ND	0.0040	mg/L	SW846 8270C
Pentachlorophenol	ND	0.040	mg/L	SW846 8270C
Pyridine	ND	0.020	mg/L	SW846 8270C
2,4,5-Trichloro- phenol	ND	0.020	mg/L	SW846 8270C
2,4,6-Trichloro- phenol	ND	0.020	mg/L	SW846 8270C
	PERCENT	RECOVERY	7	
SURROGATE	RECOVERY	LIMITS		
Nitrobenzene-d5	54	$\frac{1}{(27 - 11)}$	.0)	
2-Fluorobinhonul	61	(20 - 11	. 0.1	

PERCENT	RECOVERY
RECOVERY	LIMITS
54	(27 - 110)
61	(20 - 110)
78	(44 - 110)
43	(10 - 110)
59	(10 - 110)
36	(28 - 110)
	RECOVERY 54 61 78 43 59

#### NOTE(S):

# LABORATORY CONTROL SAMPLE DATA REPORT

#### GC/MS Semivolatiles

Client Lot #...: AOD290512 Work Order #...: LOXML1AC Matrix...... WATER

LCS Lot-Sample#: A0E040000-054

Prep Date....: 05/04/10 Analysis Date..: 05/05/10

Prep Batch #...: 0124054

Dilution Factor: 1

	SPIKE	MEASURED		PERCENT	
PARAMETER	AMOUNT	AMOUNT	UNITS	RECOVERY	METHOD
o-Cresol	0.080	0.062	mg/L	78	SW846 8270C
m-Cresol & p-Cresol	0.16	0.12	mg/L	72	SW846 8270C
1,4-Dichlorobenzene	0.080	0.055	mg/L	69	SW846 8270C
2,4-Dinitrotoluene	0.080	0.063	mg/L	79	SW846 8270C
Hexachlorobenzene	0.080	0.059	mg/L	73	SW846 8270C
Hexachlorobutadiene	0.080	0.051	mg/L	64	SW846 8270C
Hexachloroethane	0.080	0.049	mg/L	61	SW846 8270C
Nitrobenzene	0.080	0.058	mg/L	73	SW846 8270C
Pentachlorophenol	0.080	0.037	mg/L	47	SW846 8270C
Pyridine	0.080	0.045	mg/L	56	SW846 8270C
2,4,5-Trichloro- phenol	0.080	0.058	mg/L	72	SW846 8270C
2,4,6-Trichloro- phenol	0.080	0.055	mg/L	69	SW846 8270C
		PERCENT	RECOVERY		

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Nitrobenzene-d5	66	(27 - 110)
2-Fluorobiphenyl	70	(20 - 110)
Terphenyl-d14	79	(44 - 110)
Phenol-d5	57	(10 - 110)
2-Fluorophenol	68	(10 - 110)
2,4,6-Tribromophenol	70	(28 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### LABORATORY CONTROL SAMPLE EVALUATION REPORT

#### GC/MS Semivolatiles

Client Lot #...: AOD290512 Work Order #...: LOXML1AC Matrix..... WATER

LCS Lot-Sample#: A0E040000-054

Prep Date....: 05/04/10 Analysis Date..: 05/05/10

Prep Batch #...: 0124054

Dilution Factor: 1

	PERCENT	RECOVERY	
PARAMETER	RECOVERY	LIMITS	METHOD
o-Cresol	78	(23 - 110)	SW846 8270C
m-Cresol & p-Cresol	72	(28 - 110)	SW846 8270C
1,4-Dichlorobenzene	69	(13 - 110)	SW846 8270C
2,4-Dinitrotoluene	79	(45 - 119)	SW846 8270C
Hexachlorobenzene	73	(46 - 112)	SW846 8270C
Hexachlorobutadiene	64	(10 - 110)	SW846 8270C
Hexachloroethane	61	(10 - 110)	SW846 8270C
Nitrobenzene	73	(29 - 118)	SW846 8270C
Pentachlorophenol	47	(10 - 116)	SW846 8270C
Pyridine	56	(15 - 110)	SW846 8270C
2,4,5-Trichloro-	72	(36 - 110)	SW846 8270C
phenol			
2,4,6-Trichloro-	69	(32 - 110)	SW846 8270C
phenol			
		PERCENT	RECOVERY
SURROGATE		RECOVERY	LIMITS
Nitrobenzene-d5		66	(27 - 110)
2-Fluorobiphenyl		70	(20 - 110)
Terphenyl-d14		79	(44 - 110)
Phenol-d5		57	(10 - 110)
2-Fluorophenol		68	(10 - 110)
2,4,6-Tribromophenol		70	(28 - 110)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

# MATRIX SPIKE SAMPLE DATA REPORT

#### GC/MS Semivolatiles

Lot-Sample #...: A0D290512 Work Order #...: L0PT31AW Matrix.....: SOLID

MS Lot-Sample #: A0D290449-001

Date Sampled...: 04/28/10 15:15 Date Received..: 04/29/10 Prep Date....: 05/04/10 Analysis Date..: 05/05/10

Prep Batch #...: 0124053

Dilution Factor: 1 Percnt Moisture: 17

	SAMPLE	SPIKE	MEASRD		PERCENT	
PARAMETER	AMOUNT	AMT	AMOUNT	UNITS	RECOVERY	METHOD
o-Cresol	0.030	0.080	0.095	mg/L	81	SW846 8270C
2-Methylphenol	0.030	0.080	0.095	nng/L	81	SW846 8270C
m-Cresol & p-Cresol	0.040	0.16	0.18	nng/L	85	SW846 8270C
1,4-Dichlorobenzene	ND	0.080	0.054	mg/L	68	SW846 8270C
2,4-Dinitrotoluene	ND	0.080	0.057	mg/L	72	SW846 8270C
Hexachlorobenzene	ND	0.080	0.056	mg/L	69	SW846 8270C
Hexachlorobutadiene	ND	0.080	0.045	mg/L	56	SW846 8270C
Hexachloroethane	ND	0.080	0.074	mg/L	92	SW846 8270C
Nitrobenzene	ND	0.080	0.048	msg/L	61	SW846 8270C
Pentachlorophenol	ND	0.080	0.063	mg/L	78	SW846 8270C
Pyridine	ND	0.080	0.048	mg/L	60	SW846 8270C
2,4,5-Trichloro- phenol	ND	0.080	0.060	mg/L	74	SW846 8270C
2,4,6-Trichloro-	ND	0.080	0.061	mg/L	76	SW846 8270C
phenol						
			PERCENT		RECOVERY	
CLIDDOCAMO			DEGOTTED	37	TIME	

	PERCENT	RECOVERY
SURROGATE	RECOVERY	LIMITS
Nitrobenzene-d5	52	(29 - 111)
2-Fluorobiphenyl	65	(22 - 110)
Terphenyl-d14	78	(40 - 119)
Phenol-d5	58	(10 - 110)
2-Fluorophenol	69	(10 - 110)
2,4,6-Tribromophenol	79	(17 - 117)

# NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

# MATRIX SPIKE SAMPLE EVALUATION REPORT

# GC/MS Semivolatiles

Lot-Sample #...: A0D290512 Work Order #...: LOPT31AW Matrix.....: SOLID

MS Lot-Sample #: A0D290449-001

Date Sampled...: 04/28/10 15:15 Date Received..: 04/29/10 Prep Date.....: 05/04/10 Analysis Date..: 05/05/10

Prep Batch #...: 0124053

Dilution Factor: 1 Percnt Moisture: 17

	PERCENT	RECOVERY	
PARAMETER	RECOVERY	LIMITS	METHOD
o-Cresol	81	(33 - 115)	SW846 8270C
2-Methylphenol	81	(33 - 115)	SW846 8270C
m-Cresol & p-Cresol	85	(46 - 109)	SW846 8270C
1,4-Dichlorobenzene	68	(18 - 110)	SW846 8270C
2,4-Dinitrotoluene	72	(31 - 131)	SW846 8270C
Hexachlorobenzene	69	(36 - 132)	SW846 8270C
Hexachlorobutadiene	56	(18 - 116)	SW846 8270C
Hexachloroethane	92	(18 - 110)	SW846 8270C
Nitrobenzene	61	(19 - 211)	SW846 8270C
Pentachlorophenol	78	(10 - 140)	SW846 8270C
Pyridine	60	(10 - 148)	SW846 8270C
2,4,5-Trichloro-	74	(24 - 143)	SW846 8270C
phenol			
2,4,6-Trichloro-	76	(36 - 135)	SW846 8270C
phenol			
		PERCENT	RECOVERY
SURROGATE		RECOVERY	LIMITS
Nitrobenzene-d5		52	(29 - 111)
2-Fluorobiphenyl		65	(22 - 110)
Terphenyl-d14		78	(40 - 119)
Phenol-d5		58	(10 - 110)
2-Fluorophenol		69	(10 - 110)
2,4,6-Tribromophenol		79	(17 - 117)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### TCLP GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: L0XMF1AA Matrix...... WATER

MB Lot-Sample #: A0E040000-050

Dilution Factor: 1

		REPORTING	3	
PARAMETER	RESULT	LIMIT	UNITS	METHOD
Chlordane (technical)	ND	0.0050	mg/L	SW846 8081A
Endrin	ND	0.00050	mg/L	SW846 8081A
Heptachlor	ND	0.00050	mg/L	SW846 8081A
Heptachlor epoxide	ND	0.00050	mg/L	SW846 8081A
Lindane	ND	0.00050	mg/L	SW846 8081A
Methoxychlor	ND	0.0010	mg/L	SW846 8081A
Toxaphene	ND	0.020	mg/L	SW846 8081A
	PERCENT	RECOVERY		
SURROGATE	RECOVERY	LIMITS		
Decachlorobiphenyl	93	(31 - 115)		
Tetrachloro-m-xylene	85	(47 - 110	))	

## NOTE(S):

#### LABORATORY CONTROL SAMPLE DATA REPORT

#### GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: L0XMF1AC Matrix..... WATER

LCS Lot-Sample#: A0E040000-050

Prep Batch #...: 0124050

Dilution Factor: 5

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD	
Endrin	0.0020	0.0020	mg/L	98	SW846 8081A	
Heptachlor	0.0020	0.0016	mg/L	82	SW846 8081A	
Heptachlor epoxide	0.0020	0.0016	mg/L	81	SW846 8081A	
Lindane	0.0020	0.0016	mg/L	81	SW846 8081A	
Methoxychlor	0.0040	0.0036	mg/L	90	SW846 8081A	
		PERCENT	RECOVERY			
SURROGATE		RECOVERY	LIMITS	_		
Decachlorobiphenyl		96	(31 - 115)	)		
Tetrachloro-m-xylene		76	(47 - 110)	)		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### LABORATORY CONTROL SAMPLE EVALUATION REPORT

#### GC Semivolatiles

Client Lot #...: AOD290512 Work Order #...: LOXMF1AC Matrix...... WATER

LCS Lot-Sample#: A0E040000-050

**Prep Batch #...:** 0124050

Dilution Factor: 5

	PERCENT	RECOVERY	
PARAMETER	RECOVERY	LIMITS	METHOD
Endrin	98	(50 - 110)	SW846 8081A
Heptachlor	82	(57 ~ 110)	SW846 8081A
Heptachlor epoxide	81	(56 - 110)	SW846 8081A
Lindane	81	(56 ~ 110)	SW846 8081A
Methoxychlor	90	(41 - 126)	SW846 8081A
		PERCENT	RECOVERY
SURROGATE		RECOVERY	LIMITS
Decachlorobiphenyl		96	(31 - 115)
Tetrachloro-m-xylene		76	(47 - 110)

#### NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### MATRIX SPIKE SAMPLE DATA REPORT

#### GC Semivolatiles

Lot-Sample #...: A0D290512 Work Order #...: L0QN11A0 Matrix.....: WW

MS Lot-Sample #: A0D290512-001

Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10 Prep Date.....: 05/04/10 Analysis Date..: 05/11/10

Prep Batch #...: 0124050

Dilution Factor: 5

	SAMPLE	SPIKE	MEASRD		PERCENT		
PARAMETER	AMOUNT	TMA	AMOUNT	UNITS	RECOVERY	METHOD	
Endrin	ND	0.002	0.0019	mg/L	93	SW846 8081A	
Heptachlor	ND	0.002	0.0017	mg/L	83	SW846 8081A	
Heptachlor epoxide	ND	0.002	0.0017	mg/L	84	SW846 8081A	
Lindane	ND	0.002	0.0017	mg/L	87	SW846 8081A	
Methoxychlor	ND	0.004	0.0033	mg/L	81	SW846 8081A	
			PERCENT		RECOVERY		
SURROGATE			RECOVER	Y	LIMITS	_	
Decachlorobiphenyl			84	_	(31 - 115)	)	
Tetrachloro-m-xylene			78		(47 - 110	)	

# NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### MATRIX SPIKE SAMPLE EVALUATION REPORT

#### GC Semivolatiles

Lot-Sample #...: A0D290512 Work Order #...: L0QN11A0 Matrix...... WW

MS Lot-Sample #: A0D290512-001

Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10 Prep Date....: 05/04/10 Analysis Date..: 05/11/10

Prep Batch #...: 0124050

Dilution Factor: 5

PARAMETER Endrin Heptachlor Heptachlor epoxide Lindane	PERCENT RECOVERY 93 83 84 87	RECOVERY LIMITS (50 - 150) (50 - 150) (50 - 150) (50 - 150)	METHOD SW846 8081A SW846 8081A SW846 8081A SW846 8081A
Heptachlor Heptachlor epoxide	83 84	(50 - 150) (50 - 150)	SW846 8081A SW846 8081A
SURROGATE		PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl		84	(31 - 115)
Tetrachloro-m-xylene		78	(47 - 110)

# NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### GC Semivolatiles

Work Order #...: LOREG1AA Matrix..... WATER **Client Lot #...:** A0D290512

MB Lot-Sample #: A0D300000-033

Prep Date....: 04/30/10
Prep Batch #...: 0120033 Analysis Date..: 05/03/10

Dilution Factor: 1

		REPORTI	NG	
PARAMETER	RESULT	LIMIT	UNITS	METHOD
Aroclor 1016	ND	1.0	ug/L	SW846 8082
Aroclor 1221	ND	1.0	$\mathtt{ug}/\mathrm{L}$	SW846 8082
Aroclor 1232	ND	1.0	ug/L	SW846 8082
Aroclor 1242	ND	1.0	ug/L	SW846 8082
Aroclor 1248	ND	1.0	ug/L	SW846 8082
Aroclor 1254	ND	1.0	ug/L	SW846 8082
Aroclor 1260	ND	1.0	ug/L	SW846 8082
SURROGATE	PERCENT RECOVERY	RECOVER LIMITS	Y	
Tetrachloro-m-xylene	76	(27 - 130)		
Decachlorobiphenyl	66	(10 - 127)		

NOTE(S):

#### LABORATORY CONTROL SAMPLE DATA REPORT

#### GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: LOREG1AC Matrix.....: WATER

LCS Lot-Sample#: A0D300000-033

Prep Date....: 04/30/10 Analysis Date..: 05/03/10

Prep Batch #...: 0120033

Dilution Factor: 2

	SPIKE	MEASURED		PERCENT	
PARAMETER	AMOUNT	AMOUNT	UNITS	RECOVERY	METHOD
Aroclor 1016	10	8.6	ug/L	86	SW846 8082
Aroclor 1260	10	7.5	ug/L	75	SW846 8082
		PERCENT	RECOVERY		
SURROGATE		RECOVERY	LIMITS		
Tetrachloro-m-xylene		80	(27 - 130)	_	
Decachlorobiphenyl		33	(10 - 127)	)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

#### GC Semivolatiles

Client Lot #...: AOD290512 Work Order #...: LOREGIAC Matrix...... WATER

LCS Lot-Sample#: A0D300000-033

Prep Date....: 04/30/10 Analysis Date..: 05/03/10

Prep Batch #...: 0120033

Dilution Factor: 2

	PERCENT	RECOVERY	
PARAMETER	RECOVERY	LIMITS	METHOD
Aroclor 1016	86	(44 - 119)	SW846 8082
Aroclor 1260	75	(41 - 118)	SW846 8082
		PERCENT	RECOVERY
SURROGATE		RECOVERY	LIMITS
Tetrachloro-m-xylene		80	(27 - 130)
Decachlorobiphenyl		33	(10 - 127)

NOTE (S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### MATRIX SPIKE SAMPLE DATA REPORT

#### GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: L0Q051FP-MS Matrix...... WATER

**MS** Lot-Sample **#:** A0D290554-008 L0Q051FQ-MSD

Date Sampled...: 04/28/10 15:30 Date Received..: 04/29/10 Prep Date....: 04/30/10 Analysis Date..: 05/03/10

Prep Batch #...: 0120033

Dilution Factor: 2

PARAMETER	SAMPLE AMOUNT	SPIKE AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY		METHO	D
Aroclor 1016	ND	19	10	ug/L	53		SW846	8082
	ND	19	11	ug/L	60	13	SW846	8082
Aroclor 1260	ND	19	3.9	ug/L	21		SW846	8082
	ND	19	4.8	ug/L	25	19	SW846	8082
SURROGATE			ERCENT ECOVERY		RECOVERY LIMITS	_		
Tetrachloro-m-xylene		5.	5		(27 - 130	1)		
		6.	4		(27 - 130	1)		
Decachlorobiphenyl		1:	9		(10 - 127	')		
		23	3		(10 - 127	')		

# NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### MATRIX SPIKE SAMPLE EVALUATION REPORT

#### GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: L0Q051FP-MS Matrix...... WATER

**MS Lot-Sample #:** A0D290554-008 L0Q051FQ-MSD

Date Sampled...: 04/28/10 15:30 Date Received..: 04/29/10
Prep Date....: 04/30/10 Analysis Date..: 05/03/10

Prep Batch #...: 0120033

Dilution Factor: 2

	PERCENT	RECOVERY		RPD	
PARAMETER	RECOVERY	LIMITS	RPD	LIMITS	METHOD
Aroclor 1016	53	(10 - 166)			SW846 8082
	60	(10 - 166)	13	(0-30)	SW846 8082
Aroclor 1260	21	(21 - 140)			SW846 8082
	25	(21 - 140)	19	(0-30)	SW846 8082
		PERCENT		RECOVERY	
SURROGATE		RECOVERY		LIMITS	_
Tetrachloro-m-xylene		55		(27 - 130)	))
		64		(27 - 130)	))
Decachlorobiphenyl		19		(10 - 127	")
		23		(10 - 127	")

#### NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

#### TCLP GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: L03V51AA Matrix.....: WATER

MB Lot-Sample #: A0E060000-038

Dilution Factor: 1

		REPORTI	NG	
PARAMETER	RESULT	LIMIT	UNITS	METHOD
2,4-D	ND	0.50	mg/L	SW846 8151A
2,4,5-TP (Silvex)	ND	0.10	mg/L	SW846 8151A
	PERCENT	RECOVER'	Y	
SURROGATE	RECOVERY	LIMITS		
2,4-Dichlorophenylacetic acid	83	(37 - 1)	16)	

NOTE(S):

#### LABORATORY CONTROL SAMPLE DATA REPORT

#### GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: L03V51AC-LCS Matrix..... WATER

LCS Lot-Sample#: A0E060000-038 L03V51AD-LCSD

Prep Date....: 05/06/10 Analysis Date..: 05/07/10

Prep Batch #...: 0126038

Dilution Factor: 1

PARAMETER 2,4-D 2,4,5-TP (Silvex)	SPIKE AMOUNT 0.020 0.020 0.0050 0.0050	MEASURED AMOUNT 0.016 0.016 0.0041 0.0042	UNITS mg/L mg/L mg/L mg/L	PERCENT RECOVERY 81 81 82 83	RPD 0.14 2.1	METHOD SW846 8151A SW846 8151A SW846 8151A
SURROGATE  2,4-Dichlorophenylacetic acid			PERCENT RECOVERY 79	RECOVERY LIMITS (37 - 116	,	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

#### GC Semivolatiles

Client Lot #...: A0D290512 Work Order #...: L03V51AC-LCS Matrix...... WATER

LCS Lot-Sample#: A0E060000-038 L03V51AD-LCSD

**Prep Batch #...:** 0126038

Dilution Factor: 1

PARAMETER 2,4-D 2,4,5-TP (Silvex)	PERCENT RECOVERY 81 81 82 83	RECOVERY LIMITS (35 - 136) (35 - 136) (46 - 112) (46 - 112)	RPD LIMITS  0.14 (0-50)  2.1 (0-63)	METHOD SW846 8151A SW846 8151A SW846 8151A SW846 8151A
SURROGATE  2,4-Dichlorophenylacetic acid		PERCENT RECOVERY 79	RECOVERY LIMITS (37 - 116)	
		79	(37 - 116)	

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

# TCLP Metals

Client Lot #...: AOD290512 Matrix..... WATER

		REPORTING		MERMOD	PREPARATION-	WORK
PARAMETER	RESULT	LIMIT	UNITS	METHOD	ANALYSIS DATE	ORDER #
MB Lot-Sample #			atch #:			
Arsenic	ND	0.50 Dilution Fact	mg/L	SW846 6010B	05/03-05/04/10	LOWJ61AA
Barium	ND	10.0 Dilution Fact	-	SW846 6010B	05/03-05/04/10	LOWJ61AC
Cadmium	ND	0.10 Dilution Fact	_	SW846 6010B	05/03-05/04/10	LOWJ61AD
Chromium	ND	0.50 Dilution Fact	_	SW846 6010B	05/03-05/04/10	LOWJ61AE
Lead	ND	0.50 Dilution Fact	-	SW846 6010B	05/03-05/04/10	LOWJ61AF
Selenium	ND	0.25 Dilution Fact	2	SW846 6010B	05/03-05/04/10	L0WJ61AG
Silver	ND	0.50 Dilution Fact	J.	SW846 6010B	05/03-05/04/10	LOWJ61AH
Mercury	ND	0.0020 Dilution Fact	•	SW846 7470A	05/03-05/04/10	LOWJ61AJ
NOTE (S):				·		

# TCLP Metals

Client Lot #	: A0D29051	2		M	Matrix WATER			
PARAMETER	RESULT	REPORTII LIMIT	NG UNITS	METHOD	PREPARATION- ANALYSIS DATE	WORK Order #		
MB Lot-Sample	e #: A0E03000	0-253 <b>Prep</b> 1	Batch #:	0123253				
Arsenic	ND	0.50 Dilution Fac	mg/L	SW846 6010B	05/03-05/04/10	L0WXK1AÄ		
Barium	ND	10.0 Dilution Fac	-	SW846 6010B	05/03-05/04/10	L0WXK1AC		
Cadmium	ND	0.10 Dilution Fac	-	SW846 6010B	05/03-05/04/10	L0WXK1AD		
Chromium	ND	0.50 Dilution Fac	-	SW846 6010B	05/03-05/04/10	LOWXK1AE		
Lead	ND	0.50 Dilution Fac	mg/L ctor: 1	SW846 6010B	05/03-05/04/10	LOWXK1AF		
Selenium	ND	0.25 Dilution Fac	_	SW846 6010B	05/03-05/04/10	L0WXK1AG		
Silver	ND	0.50 Dilution Fac	3.	SW846 6010B	05/03-05/04/10	L0WXK1AH		
Mercury	ND	0.0020 Dilution Fac	J .	SW846 7470A	05/03-05/04/10	L0WXK1AJ		

# LABORATORY CONTROL SAMPLE DATA REPORT

# TCLP Metals

Client Lot #...: AOD290512 Matrix.....: WATER

SPIKE	MEASURE	:D	PERCN	T		PREPARATION-	WORK
AMOUNT	AMOUNT	<u>UNITS</u>	RECVR	Y METHOD	)	ANALYSIS DATE	ORDER #
ole#: A0E	:030000-2	253 <b>Prep B</b>	atch #	.: 01232	253		
2.0		_				05/03-05/04/10	LOWXK1AK
		Dilution Fac	tor: 1				
2.0	2.1	mg/L	103	SW846	6010B	05/03-05/04/10	LOWXK1AL
		Dilution Fac	tor: 1				
0.050	0.053	mg/L	106	SW846	6010B	05/03-05/04/10	LOWXK1AM
		-					
0.20	0.21	mg/L	105	SW846	6010B	05/03-05/04/10	LOWXK1AN
		-					
0.50	0.53	mg/L	105	SW846	6010B	05/03-05/04/10	LOWXK1AF
		_					
2.0	2.1	mg/L	107	SW846	6010B	05/03-05/04/10	LOWXK1AC
		-				,,,,	
0.050	0.053	mg/L	106	SW846	6010B	05/03-05/04/10	T.OWXK1AR
		-		2	00202	00, 00 00, 01, 20	
0 0050	0 0054	mg/L	108	SW846	7470A	05/03-05/04/10	I.OWXK1AT
0.0050				2010		55,65 65,64716	-J.MILLIA
	AMOUNT  ple#: AOE 2.0  2.0  0.050  0.20  0.50	AMOUNT AMOUNT    AMOUNT	AMOUNT AMOUNT UNITS    Ole   AMOUNT   AMOUNT   UNITS	AMOUNT AMOUNT UNITS RECVE    AMOUNT   AMOUNT   UNITS   RECVE   AMOUNT   AMOUNT   UNITS   AMOUNT   UNITS   AMOUNT   UNITS   AMOUNT   UNITS   UN	AMOUNT AMOUNT UNITS RECVRY METHOD    AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT AMOUNT UNITS RECVRY METHOD   AMOUNT UNITS RECVR	AMOUNT AMOUNT UNITS RECVRY METHOD    AMOUNT AMOUNT UNITS   RECVRY METHOD	AMOUNT AMOUNT UNITS RECVRY METHOD ANALYSIS DATE  Ple#: A0E030000-253 Prep Batch #: 0123253 2.0 2.1 mg/L 107 SW846 6010B 05/03-05/04/10 Dilution Factor: 1  2.0 2.1 mg/L 103 SW846 6010B 05/03-05/04/10 Dilution Factor: 1  0.050 0.053 mg/L 106 SW846 6010B 05/03-05/04/10 Dilution Factor: 1  0.20 0.21 mg/L 105 SW846 6010B 05/03-05/04/10 Dilution Factor: 1  0.50 0.53 mg/L 105 SW846 6010B 05/03-05/04/10 Dilution Factor: 1  2.0 2.1 mg/L 105 SW846 6010B 05/03-05/04/10 Dilution Factor: 1  0.50 0.53 mg/L 105 SW846 6010B 05/03-05/04/10 Dilution Factor: 1

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

# TCLP Metals

Client Lot #...: A0D290512 Matrix.....: WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION- ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample <b>∦:</b> Arsenic	A0E030000- 107	_	sw846 6010B or: 1	05/03-05/04/10	LOWXK1AK
Barium	103	(50 - 150) Dilution Facto	SW846 6010B or: 1	05/03-05/04/10	LOWXK1AL
Cadmium	106	(50 - 150) Dilution Facto	SW846 6010B or: 1	05/03-05/04/10	LOWXK1AM
Chromium	105	(50 - 150) Dilution Facto	SW846 6010B	05/03-05/04/10	L0WXK1AN
Lead	105	(50 - 150) Dilution Facto	SW846 6010B	05/03-05/04/10	LOWXK1AP
Selenium	107	(50 - 150) Dilution Factor	SW846 6010B	05/03-05/04/10	L0WXK1AQ
Silver	106	(50 - 150) Dilution Factor	SW846 6010B	05/03-05/04/10	L0WXK1AR
Mercury	108	(50 - 150) Dilution Facto	SW846 7470A or: 1	05/03-05/04/10	L0WXK1AT
NOTE(S):					

# MATRIX SPIKE SAMPLE DATA REPORT

#### TCLP Metals

Client Lot #...: A0D290512 Matrix....: WATER

Date Sampled...: 04/30/10 09:15 Date Received..: 04/30/10

	SAMPLE	CDIVE	MEASRD		PERCNT				PREPARATION-	WORK
PARAMETER			AMOUNT	UNITS	RECVRY	<u>RPD</u>	METHO	)	ANALYSIS DATE	ORDER #
MS Lot-Sa Leach Dat Arsenic				Prep Batch Leach Batch						
	ND	5.0	5.1	mg/L	103		SW846	6010B	05/03-05/04/10	LOVAA1AN
	ND	5.0	5.1 Dilut	mg/L tion Factor: 5	101	1.1	SW846	6010B	05/03-05/04/10	LOVAA1AP
Barium										
	ND	50.0	49.7	mg/L	99		SW846	6010B	05/03-05/04/10	L0VAA1AQ
	ND	50.0	48.8	mg/L	97	1.8	SW846	6010B	05/03-05/04/10	L0VAA1AR
			Dilut	tion Factor: 5						
Cadmium										
oddii 2 dii	ND	1.0	1.0	mg/L	103		SW846	6010B	05/03-05/04/10	L0VAA1AT
	ND	1.0	1.0	mg/L	102	1.5	S <b>W</b> 846	6010B	05/03-05/04/10	LOVAA1AU
			Dilut	tion Factor: 5						
Chromium										
	ND	5.0	5.1	mg/L	102		SW846	6010B	05/03-05/04/10	L0VAA1AV
	ND	5.0	5.1	mg/L	101	1.3	SW846	6010B	05/03-05/04/10	LOVAA1AW
			Dilut	tion Factor: 5						
Lead										
	ND	5.0	5.2	mg/L	104		SW846	6010B	05/03-05/04/10	L0VAA1AX
	ND	5.0	5.1	mg/L	102	1.5	SW846	6010B	05/03-05/04/10	LOVAA1A0
			Dilut	tion Factor: 5						
Selenium										
	ND	1.0	0.83	mg/L	83		SW846	6010B	05/03-05/04/10	LOVAA1A1
	ND	1.0	0.80	mg/L	80	4.3	SW846	6010B	05/03-05/04/10	L0VAA1A2
			Dilut	cion Factor: 5						
Silver										
	ND	1.0	1.0	mg/L	101		SW846	6010B	05/03-05/04/10	L0VAA1A3
	ND	1.0	1.0	mg/L	100	1.5	SW846	6010B	05/03-05/04/10	LOVAA1A4
			Dilut	tion Factor: 5						
Mercury										
_	ND	0.0050			10'5			7470A		LOVAA1A5
	ND	0.0050		mg/L	106	0.86	SW846	7470A	05/03-05/04/10	L0VAA1A6
			Dilut	ion Factor: 1						
NOTE(S):										

NOTE(S):

#### MATRIX SPIKE SAMPLE EVALUATION REPORT

#### TCLP Metals

Matrix..... WATER

05/03-05/04/10 LOVAA1AX

05/03-05/04/10 LOVAA1A0

05/03-05/04/10 LOVAA1A1

05/03-05/04/10 LOVAA1A2

05/03-05/04/10 LOVAA1A3

05/03-05/04/10 LOVAA1A4

05/03-05/04/10 LOVAA1A5

05/03-05/04/10 LOVAA1A6

PERCENT RECOVERY RPD PREPARATION-WORK PARAMETER RECOVERY LIMITS RPD LIMITS METHOD ANALYSIS DATE ORDER # MS Lot-Sample #: A0D300588-001 Prep Batch #...: 0123253 Leach Date....: 05/03/10 **Leach Batch #..:** P012302 Arsenic 103 (50 - 150)SW846 6010B 05/03-05/04/10 LOVAA1AN 101 (50 - 150) 1.1 (0-20) SW846 6010B 05/03-05/04/10 LOVAA1AP Dilution Factor: 5 Barium 99 (50 - 150)SW846 6010B 05/03-05/04/10 LOVAA1AO 97 (50 - 150) 1.8 (0-20)SW846 6010B 05/03-05/04/10 LOVAA1AR Dilution Factor: 5 SW846 6010B 05/03-05/04/10 LOVAA1AT Cadmium 103 (50 - 150)102 (50 - 150) 1.5 (0-20)SW846 6010B 05/03-05/04/10 LOVAA1AU Dilution Factor: 5 102 (50 - 150)SW846 6010B 05/03-05/04/10 LOVAA1AV Chromium 101 (50 - 150) 1.3 (0-20) SW846 6010B 05/03-05/04/10 LOVAA1AW

SW846 6010B

SW846 6010B

SW846 6010B

SW846 6010B

SW846 6010B

SW846 7470A

Dilution Factor: 5

Dilution Factor: 5

(50 - 150) 4.3 (0-20)

(50 - 150) 1.5 (0-20)
Dilution Factor: 5

Dilution Factor: 5

Dilution Factor: 1

(50 - 150) 1.5 (0-20) SW846 6010B

(50 - 150) 0.86 (0-20) SW846 7470A

(50 - 150)

(50 - 150)

(50 - 150)

(50 - 150)

Mercury

Lead

Selenium

Silver

NOTE (S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Client Lot #...: A0D290512

104

102

83

80

101

100

105

106

Date Sampled...: 04/30/10 09:15 Date Received..: 04/30/10

# General Chemistry

NOTE(S):

Client Lot #: A	DD290512	Matrix: WATE				
PARAMETER Acid-soluble sulfic	RESULT de ND	REPORTING LIMIT Work Order 3.0 Dilution Fact	UNITS #: LOTQH1AA mg/L	METHOD  MB Lot-Sample #: SW846 9030B/9034	PREPARATION- ANALYSIS DATE A0D300000-302 04/30/10	PREP BATCH # 0120302
Cyanide, Total	ND	Work Order 0.010 Dilution Fact	#: L09VH1AA mg/L or: 1	MB Lot-Sample #: SW846 9012A	A0E100000-227 05/10/10	0130227
Total Solids (Residue)	ND	Work Order  10  Dilution Fact	#: LOWL21AA  mg/L  or: 1	MB Lot-Sample #: MCAWW 160.3	A0E030000-092 05/03-05/05/10	0123092

# LABORATORY CONTROL SAMPLE DATA REPORT

# General Chemistry

Client Lot #: A0D290512 Matrix							WATER			
PARAMETER Acid-soluble			UNITS Work Order #:	103	MET 1AC	LCS	Lot-Sample	<u>ANA</u> e#:	PARATION- LYSIS DATE A0D300000-3 04/30/10	BATCH #
Corrosivity	6.5	6.4	Work Order #: No Units Dilution Factor	100			_		A0D290000-4 04/27/10	
Cyanide, Tot		0.37	Work Order #: mg/L Dilution Factor	96			-		A0E100000-2: 05/10/10	
Total Solids (Residue)	280	280	Work Order #: mg/L Dilution Factor	103					A0E030000-09	

NOTE(S):

# LABORATORY CONTROL SAMPLE EVALUATION REPORT

# General Chemistry

Client Lot #...: AOD290512 Matrix..... WATER

PARAMETER Acid-soluble su	PERCENT RECOVERY lfide 103	Work Order	SW846 9030B/9034	PREPARATION- ANALYSIS DATE Ot-Sample#: A0D3000000 04/30/10	PREP BATCH # -302 0120302
Corrosivity	100		SW846 9045A	ot-Sample#: A0D290000 04/27/10	-431 0119431
Cyanide, Total	96		SW846 9012A	ot-Sample#: A0E100000 05/10/10	-227 0130227
Total Solids (Residue)		Work Order	#: LOWL21AC LCS Lo	t-Sample#: A0E030000	-092
	103	(88 - 111) Dilution Fact	MCAWW 160.3	05/03-05/05/10	0123092

Calculations are performed before rounding to avoid round-off errors in calculated results.

NOTE(S):

### MATRIX SPIKE SAMPLE DATA REPORT

### General Chemistry

Client Lot #...: A0D290512 Matrix.....: WATER

Date Sampled...: 04/27/10 13:24 Date Received..: 04/28/10

PARAMETER	SAMPLE AMOUNT	AMT	MEASRD AMOUNT	UNITS	PERCNT RECVRY		METHOD		PREPARATION- ANALYSIS DATE	PREP BATCH #
Acid-Solub	le Sulf:	ide	WO#:	LONXD1G8-MS,	/LONXD10	39-MSI	D MS Lot	t-Sample	e #: A0D280564·	-004
	ND	9	6 N	mg/L	69		SW846 90	030B/9	04/30/10	0120301
	ND	9	7	mg/L	78	12	SW846 90	030B/9	04/30/10	0120301
			Dilut	ion Factor: 1						
Cyanide, T	otal		WO#:	LOVFM1AQ-MS	/LOVFM1	R-MSI	MS Lot	t-Sample	e #: A0D300616-	-001
	ND	0.040	0.029	mg/L	73		SW846 90	012A	05/10/10	0130227
	ND	0.040	0.031	mg/L	76	4.7	SW846 90	012A	05/10/10	0130227
			Diluta	ion Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

### MATRIX SPIKE SAMPLE EVALUATION REPORT

### General Chemistry

Client Lot #...: A0D290512 Matrix.....: WATER

Date Sampled...: 04/27/10 13:24 Date Received..: 04/28/10

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD RPD LIMITS	METHOD	PREPARATION- PREP ANALYSIS DATE BATCH #
Acid-Soluble	Sulfide	WO#	: LONXD1G8-MS	/LONXD1G9-MSD MS I	ot-Sample #: A0D280564-004
	69 N	(75 - 125	)	SW846 9030B/9034	04/30/10 0120301
	78	(75 - 125	) 12 (0-20)	SW846 9030B/9034	04/30/10 0120301
		Dilu	tion Factor: 1		
Cyanide, Tota	al	WO#	: LOVFM1AQ-MS	/LOVFM1AR-MSD MS I	ot-Sample #: A0D300616-001
	73	(42 - 140	)	SW846 9012A	05/10/10 0130227
	76	(42 - 140	) 4.7 (0-20)	SW846 9012A	05/10/10 0130227
		Dilu	tion Factor: 1		

### NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

### General Chemistry

Client Lot #...: A0D290512 Work Order #...: L0KC9-SMP Matrix.....: SOLID

LOKC9-DUP

Date Sampled...: 04/26/10 14:00 Date Received..: 04/27/10

**% Moisture....:** 72

Dilution Factor: 1

### General Chemistry

Client Lot #...: A0D290512 Work Order #...: LONXD-SMP Matrix.....: WATER

LONXD-DUP

Date Sampled...: 04/27/10 13:24 Date Received..: 04/28/10

RPD PREPARATION-DUPLICATE PREP ANALYSIS DATE BATCH # PARAM RESULT LIMIT METHOD RESULT UNITS RPD Total Solids SD Lot-Sample #: A0D280564-004 (Residue) 980 970 mg/L 1.1 (0-20) MCAWW 160.3 05/03-05/05/10 0123092

Dilution Factor: 1

### General Chemistry

Client Lot #...: A0D290512 Work Order #...: L0QN1-SMP Matrix.....: WW

LOQN1-DUP

Date Sampled...: 04/26/10 10:00 Date Received..: 04/27/10

PARAM RESULT Total Solids	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD SD Lot-Sample #:	PREPARATION- ANALYSIS DATE A0D290512-001	PREP BATCH #
(Residue) 270	280	mg/L Dilution Fac		(0-20)	MCAWW 160.3	05/03-05/05/10	0123092

### General Chemistry

Client Lot #...: A0D290512 Work Order #...: LOQLM-SMP Matrix.....: WATER

LOQLM-DUP

Date Sampled...: 04/28/10 10:45 Date Received..: 04/29/10

DUPLICATE RPD PREPARATION-PREP PARAM RESULT RESULT UNITS RPD LIMIT METHOD ANALYSIS DATE BATCH # Flashpoint SD Lot-Sample #: A0D290507-001 (0-20) SW846 1010 >180 >180 0.0 05/10/10 0130398 deg F Dilution Factor: 1



## CONESTOGA-ROVERS & ASSOCIATES

## CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Cusiody is a LEGAL DOCUMENT. All relevant fields must be completed securately.

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### CONESTOGA-ROVERS & ASSOCIATES

# CHAIN-OF-CUSTODY / Analytical Request Document The Chain-of-Custody is a LEGAL DOCUMENT. All relevant fields must be completed securately.

Required Client Information:  Company, Click Market  Address: 1405		Sealed Sample	Received or	S	AIRBI	٠	\$HE	_	<u> </u>	<u>∓</u>	<u> </u>	Ę,	Ξ		٥	<i>9</i> 0	.7	ە ھ	<u>, v</u>	<u>,</u> ⊾ — _	<u>ب</u>	2	<u>-</u>	Same						Email:	Fax	밀	T	à	င္က	Requ	
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were received after			
	were receive	d in a broker	containe
were receive	ed with bubble >6 mm	in diameter.	(Notify PN
ITION			
	were further prese	rved in Sam	ole:
nended pH level(s). Nitric Acid Lot# 121709-HN			
t time was preservative added to sample(s)?			
pH		Date	Initials
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th Canton Facility	t Form/Narrative		1-141-1-
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TestAmerica Coole	r Receipt Form/Narrative 1 of No	
North Canton Facil	LOI NI	mber: 401290512
Client CLA		
Cooler Received on	4-27-10 Opened on 4-29 1	By: []
FedEx DUPS DHL	FAS Stetson Client Door Off Contamoring	(Signature)
י בשטטווטוועם בטטוקו <del>ווי</del>	Editor V4 Multiple Copiers     Foeth Box [7] Client of	ourier Other
1. Were custody seals of	on the outside of the cooler(s)? Yes \( \text{No} \( \text{No} \) Intact?	ooler Other
I IT YES, Quantity	(Quantity Unsalvageable	Yes No NA
Were custody seals of		Yes No NA
Were custody seals of	on the bottle(s)?	Yes No No
If YES, are there any		710 12
	attached to the cooler(s)?	Yes No [
<ol><li>Did custody papers a</li></ol>	ccompany the sample(s)? Yes No Relir	quished by client? Yes 1 No 1
	pers signed in the appropriate place?	Yes 🖸 No 🗍
<ol><li>Packing material used</li></ol>	d: Bubble Wrap 🛛 Foam 🔲 None 🗌 Other	<del></del>
6. Cooler temperature u	pon receipt <u>L.O</u> °C See back of form for multipl	e coolers/temps
	Other	
	Dry Ice ☐ Water ☐ None ☐	
		Yes 🛮 No 🔲
		Yes No 🗆
		Yes No NA
		Yes No 🗌
11. Were air bubbles >6 r	<del>-</del>	Yes   No   NA
•	•	Yes No 🗍
Contacted PM	ent in the cooler(s)? Yes	
Contacted PM	Date by via V	erbal 🗌 Voice Mail 🗌 Other 🗌
14 CHAIN OF CUSTOD	<b>V</b>	
The following discrepance	والمراج والمناف	
	Xtra Volume for Sande 10	econol (1/07/m
	The marker tot wanter to	कालाह्य सीकर्पाल
15. SAMPLE CONDITIO		
Sample(s)	were received after the recomm	
Sample(s)		received in a broken container.
Sample(s)		>6 mm in diameter. (Notify PM)
16. SAMPLE PRESERVA		or processed in Comple
Sample(s)	mended pH level(s). Nitric Acid Lot# 121709-HNO <sub>3</sub> , Sulfuric Acid	er preserved in Sample
Nocorving to meet recomm	DH; Hydrochloric Acid Lot# 092006-HCl; Sodium Hydroxide and Zir	nc Acetate Lot# 100108-
(CH3COO)2N/NeOH. Wha	at time was preservative added to sample(s)?	
Client ID	На	Date Initials
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	Temp. °C	Temp. ℃ Method



### END OF REPORT